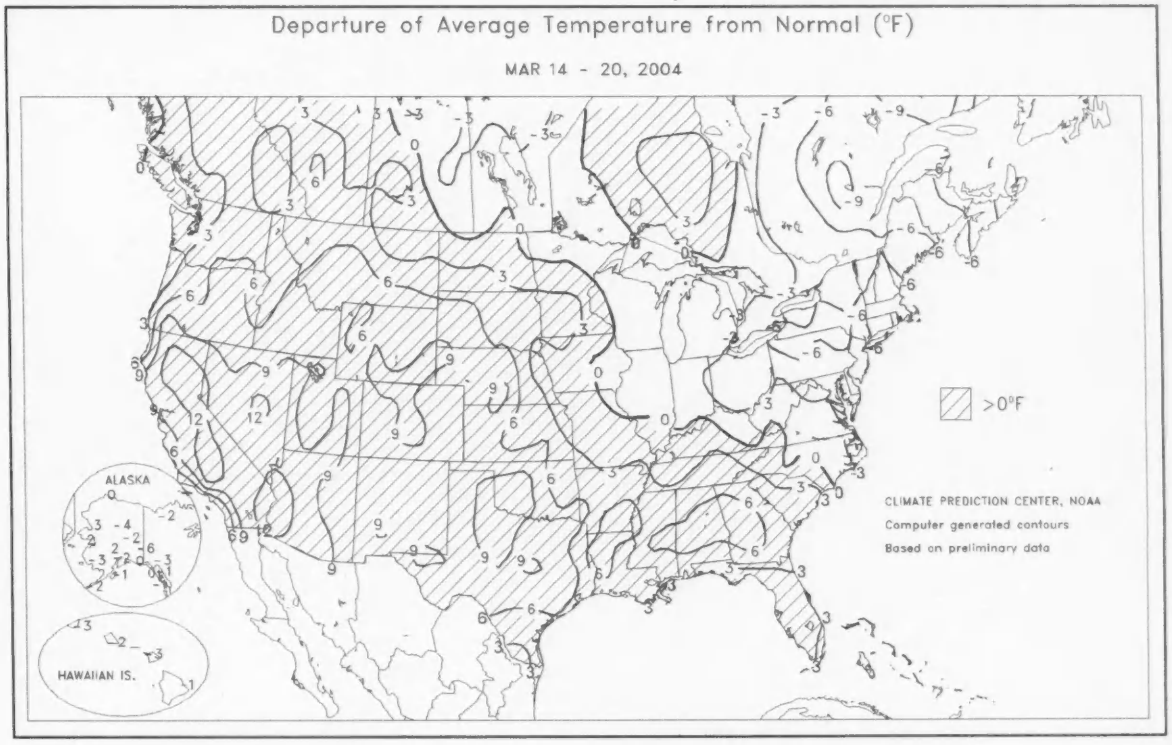
Volume 91, No. 12 http://www.usda.gov/oce/waob/jawf/wwcb.html March 23, 2004

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board



HIGHLIGHTS

March 14 - 20, 2004

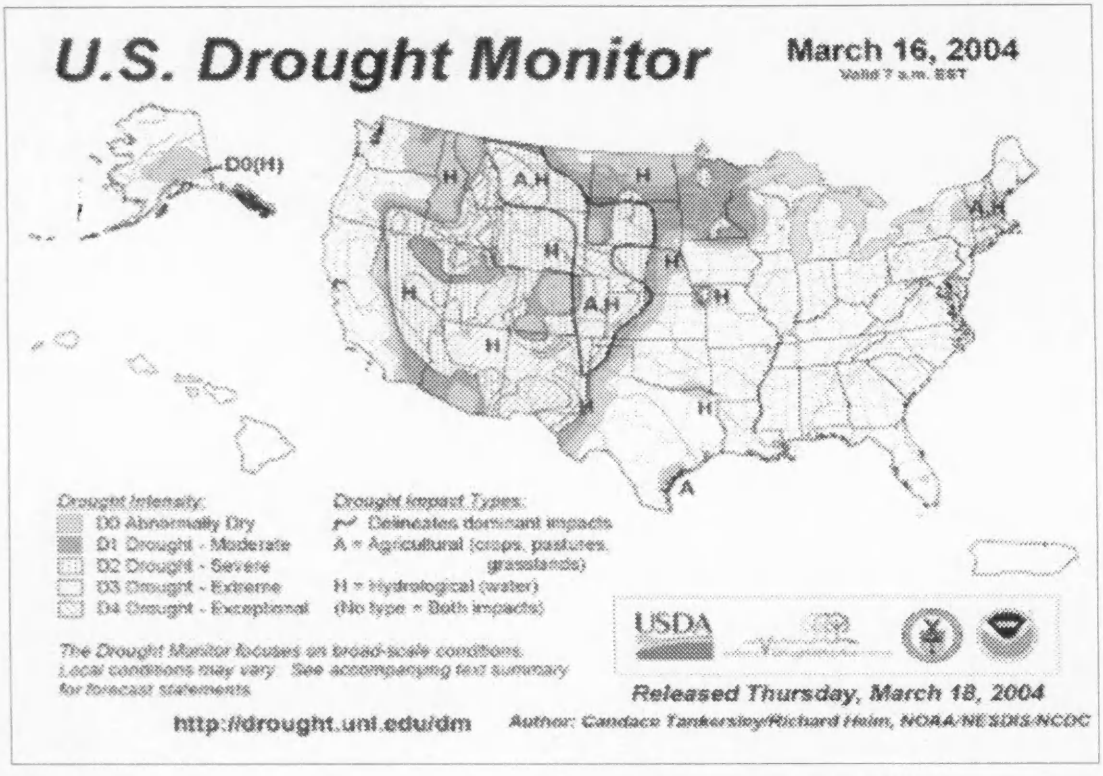
Highlights provided by USDA/WAOB

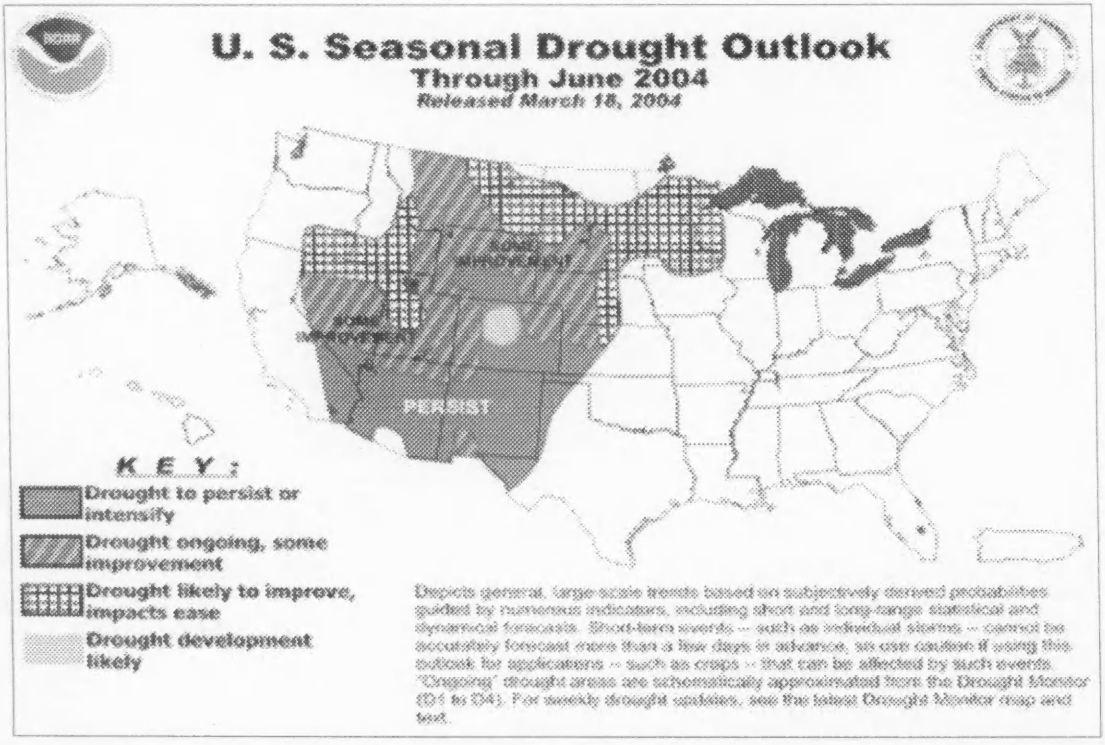
Very warm weather prevailed from the **Rockies westward**, promoting spring fieldwork and the development of **Northwestern** winter grains, but causing some premature melting of **Western** snowpacks. Weekly temperatures averaged at least 10°F above normal in many areas, especially across **California**, the **Great Basin**, and the **Southwest**. An early snow-melt season may translate into reduced water availability during the peak demand (summer) months, especially in drought-affected areas of the **Great Basin**, **central and southern Rockies**, and

(Continued on page 5)

Contents

March 16 Drought Monitor &
U.S. Seasonal Drought Outlook 2
Weather Data for Mississippi and the Missouri Bootheel &
Soil Temperature Map 3
Extreme Maximum & Minimum Temperature Maps 4
Total Precipitation Map 5
National Weather Data for Selected Cities 6
National Agricultural Summary & Snow Cover Map 9
March 11 ENSO Update 10
International Weather and Crop Summary &
February Temperature/Precipitation Maps 11
Subscription Information 28


U.S. Drought Monitor
March 16, 2004
Valid 7 a.m. EST
D0(H)
H
A,H
Drought Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
(No type = Both impacts)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
Released Thursday, March 18, 2004
http://drought.unl.edu/dm
Author: Candace Tankersley/Richard Heim, NOAA/NESDIS/NCDC


U. S. Seasonal Drought Outlook
Through June 2004
Released March 18, 2004
PERSIST
K E Y :
Drought to persist or intensify
Drought ongoing, some improvement
Drought likely to improve, impacts ease
Drought development likely
Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are schematically approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text.

Weather Data for Mississippi and the Missouri Bootheel

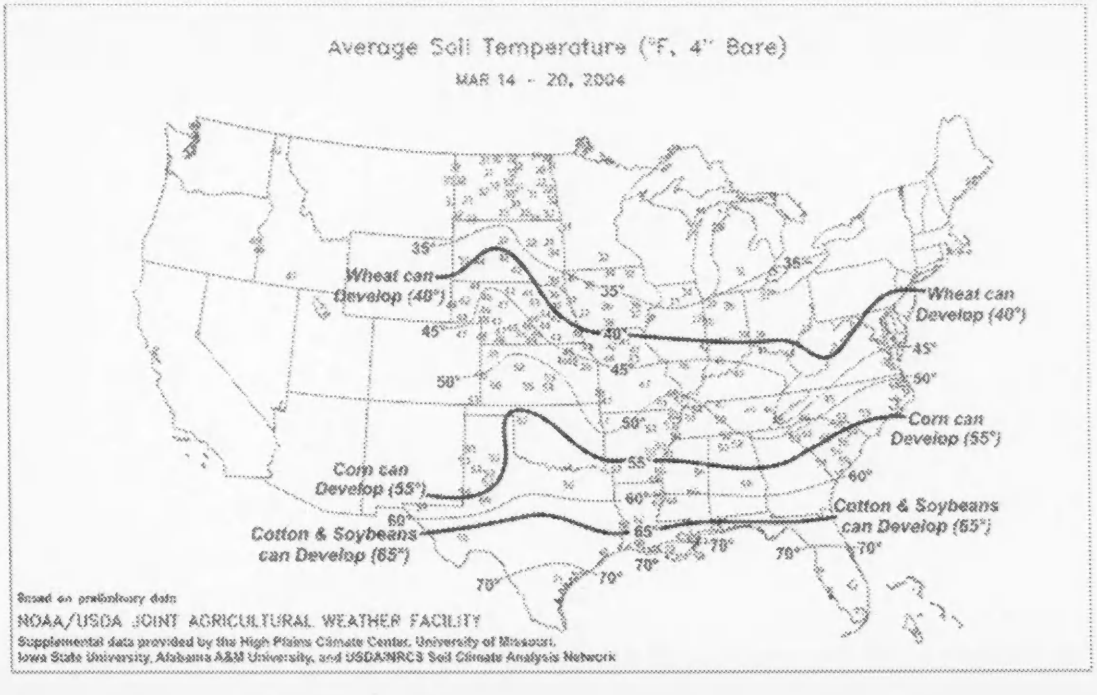
Weather Data for the Week Ending March 20, 2004

Data provided by the Mississippi State Delta Research and Extension Center (DREC), the Southern Regional Climate Center (SRCC), and the University of Missouri.

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							4-INCH SOIL TEMP, °F		NUMBER OF DAYS			
																	TEMP. °F		PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
MS	INDIANOLA 1S	72	52	85	44	62	-	0.77	-	0.37	1.58	-	12.35	-	-	-	0	0	6	0
	INVERNESS 5E	72	54	85	45	63	-	0.96	-	0.58	3.12	-	13.51	-	69	57	0	0	5	1
	LYON	70	51	84	39	60	-	1.37	-	0.78	4.10	-	13.98	-	62	54	0	0	4	1
	MACON	76	51	86	41	63	-	0.37	-	0.24	2.57	-	14.60	-	68	58	0	0	2	0
	ONWARD	74	53	85	46	63	-	0.49	-	0.28	3.66	-	13.90	-	-	-	0	0	5	0
	PERTHSHIRE	70	51	85	40	60	-	2.39	-	0.78	5.02	-	16.68	-	-	-	0	0	5	3
	SCOTT	71	53	86	43	62	-	1.86	-	0.87	3.29	-	14.69	-	-	-	0	0	5	1
	SIDON	72	53	84	43	63	-	0.80	-	0.57	3.65	-	15.55	-	69	55	0	0	6	1
	STARKVILLE	73	50	85	40	62	7	0.53	-0.87	0.36	4.22	104	13.36	91	-	-	0	0	5	0
	TUNICA 1W	69	48	82	35	58	-	1.36	-	0.62	3.15	-	14.18	-	-	-	0	0	4	1
	VANCE	68	50	83	39	59	-	1.40	-	0.41	3.31	-	14.69	-	-	-	0	0	5	0
	VERONA	70	49	84	38	60	-	0.99	-	0.62	4.59	-	13.24	-	66	52	0	0	3	1
	STONEVILLE [X]	69	51	81	46	60	5	0.54	-0.74	0.43	1.10	29	12.93	95	64	56	0	0	6	0
MO	DELTA	64	37	75	30	50	1	0.42	-0.58	0.20	3.16	119	6.90	75	57	44	0	1	4	0
	STEELE	66	43	76	34	54	4	0.65	-0.30	0.40	2.83	87	8.53	80	58	49	0	0	4	0
	GLENNONVILLE	64	40	75	31	52	3	0.74	-0.23	0.47	2.25	85	5.92	68	59	48	0	1	4	0
	PORTAGEVILLE LF	65	41	76	34	54	5	1.05	0.10	0.70	3.60	124	8.81	90	60	46	0	0	4	1
	CLARKTON	64	40	75	30	52	3	0.57	-0.40	0.28	2.79	106	6.82	78	55	47	0	1	4	0
	CARDWELL	66	41	76	32	54	3	0.99	0.03	0.52	2.79	85	8.22	78	58	49	0	0	6	1
	CHARLESTON	64	40	76	35	52	4	0.51	-0.51	0.19	2.23	81	6.65	69	58	46	0	0	6	0
	PORTAGEVILLE DC	65	42	75	33	54	5	0.79	-0.16	0.45	3.22	111	8.94	92	60	46	0	0	4	0

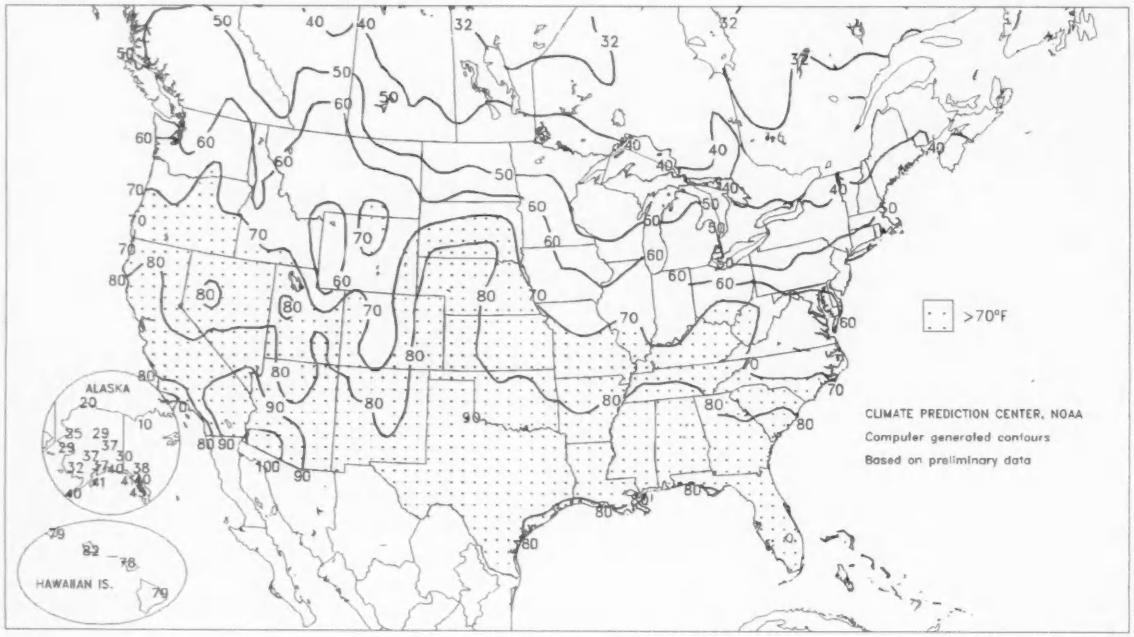
Compiled by USDA/OCE/WAOB's Stoneville Field Office.
[X] Based on 1971-2000 normals.
- Sufficient data not available.

Weather and Crop Summary: Sporadic rain showers and isolated thunderstorms accompanied above-normal temperatures. Readings reached 80°F or higher in the Mississippi Delta but peaked near 75°F in the Missouri Bootheel. Weather conditions allowed fieldwork to continue in some areas, although parts of the Delta experienced some fieldwork delays. Additional corn and a few soybean acres were planted, mostly in areas where rainfall totaled less than 1 inch. Winter wheat was growing well and starting to elongate.


Average Soil Temperature (°F, 4" Bare)
MAR 14 - 20, 2004
Wheat can Develop (40°)
Wheat can Develop (40°)
Corn can Develop (55°)
Corn can Develop (55°)
Cotton & Soybeans can Develop (65°)
Cotton & Soybeans can Develop (65°)
Based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Supplemental data provided by the High Plains Climate Center, University of Missouri, Iowa State University, Alabama A&M University, and USDA/NRCS Soil Climate Analysis Network

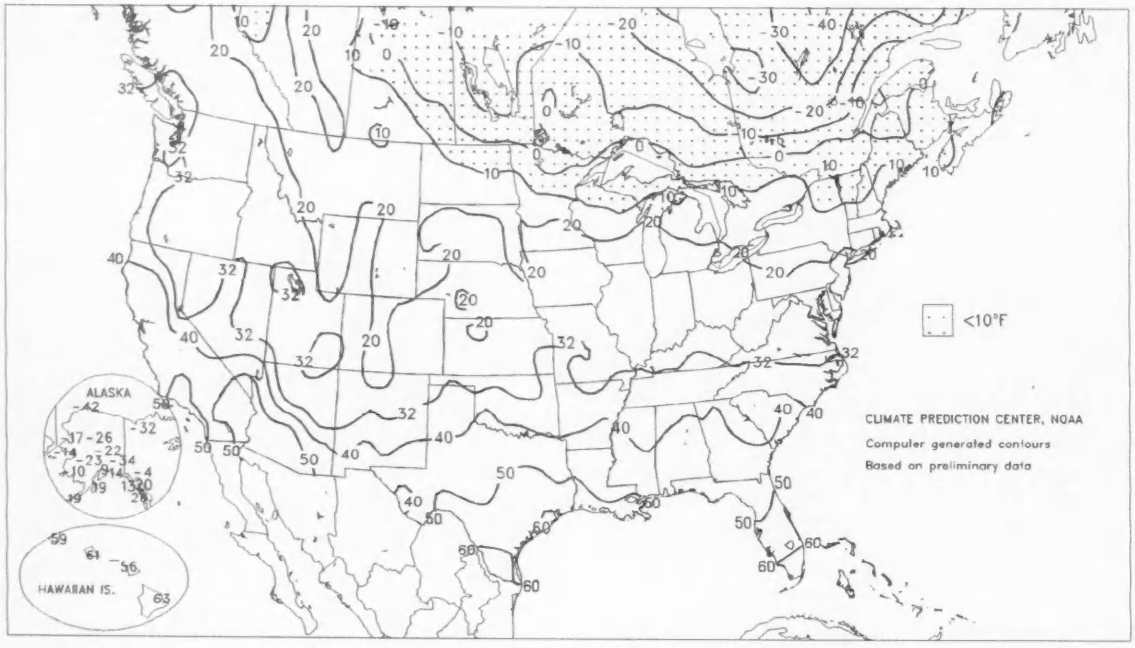
Extreme Maximum Temperature (°F)

MAR 14 - 20, 2004



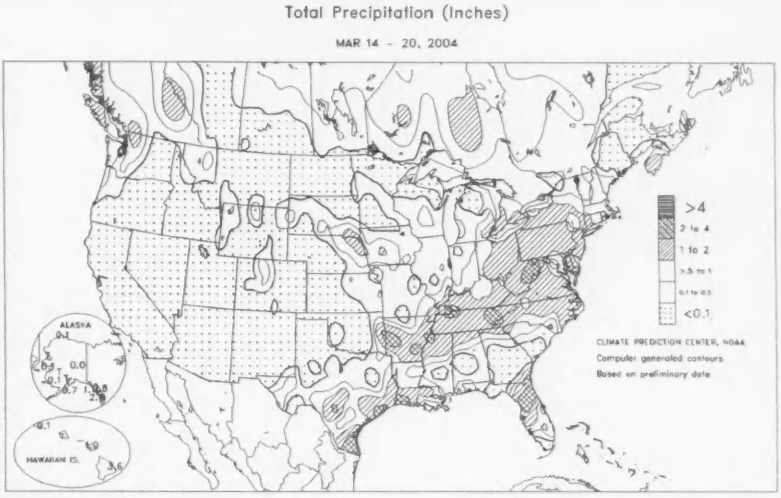
Extreme Minimum Temperature (°F)

MAR 14 - 20, 2004



(Continued from front cover)

Southwest. Farther east, warm, dry weather also covered the **Plains** for a second consecutive week. Drought effects on pastures and winter wheat were significant on the parched **central High Plains** and became more apparent on the **northern High Plains**. Although the **southern Plains'** wheat areas received substantial rainfall as recently as early March, more precipitation was needed during the ongoing warm spell to sustain normal crop development. In contrast, a second consecutive week of chilly weather (temperatures as much as 5°F below normal) in the **Midwest** slowed winter wheat development from the **Ohio and middle Mississippi Valleys to the lower Great Lakes region**. A late-season snowstorm affected parts of the **Corn Belt**, including **southern and western Iowa**, early in the week, followed by some additional rain and snow showers thereafter. Widespread snow also blanketed the **northern Mid-Atlantic region** and **southern New England**, mostly on March 16 and 18-19. Farther south, warm, mostly dry weather promoted spring planting but reduced soil moisture reserves in the **southern Atlantic States**, especially across **southern Georgia**. Scattered showers and thunderstorms caused minor fieldwork delays elsewhere in the **South**, including the **western Gulf Coast region** and the **Delta**.



Early in the week, snowy weather spread eastward from the **Corn Belt**. In **Iowa**, daily-record totals for March 15 included 18.4 inches in **Sioux City** and 15.6 inches in **Des Moines**. It was **Sioux City's** snowiest March day on record (previously, 16.0 inches on March 28, 1930). In **Des Moines**, the only days featuring higher snowfall totals were January 1, 1942 (19.8 inches), and December 26, 1888 (17.0 inches). Farther east, March 16 totals of 14.3 inches in **Buffalo, NY**, 10.2 inches in **Williamsport, PA**, and 6.1 inches in **Newark, NJ**, set records for the date. Weekly snowfall in those three locations reached 16.0, 14.7, and 9.4 inches, respectively. In addition, **Cleveland, OH**, netted 7.1 inches on March 16 en route to a weekly snowfall of 10.7 inches. Meanwhile in **Connecticut**, **Bridgeport** received 5.1 inches of snow on March 16-17 and 5.6 inches on March 18-19. Farther south, scattered, locally heavy rain showers dotted the **South**. In **southern Texas**, daily-record totals on March 15 included 3.23 inches in **Brownsville** and 2.92 inches in **McAllen**. **Brownsville's** total also shattered its daily record for March, previously set with a 2.73-inch rainfall on March 12, 1903.

Well over 350 daily-record highs were set or tied during the week, more than 250 of which occurred from March 18-20. March 20 alone featured more than 100 daily records across the **West**. Temperatures reached or exceeded 80°F on 13 consecutive days (March 8-20) in downtown **Sacramento, CA**, smashing its record of 4 March days in a row most recently attained from March 28-31, 2002. Daily-record highs were set or tied in downtown **Sacramento** on 12 of those 13 days. In addition, downtown **Sacramento** shattered its March record for days with highs of 80°F or greater, previously set with 8 such days in 2001. Heat intensified at week's end across the **Southwest**, where **Las Vegas, NV** (90°F on March 20), noted its earliest reading of 90°F or higher (previously, 91°F on March 31, 1966). Elsewhere, **Death Valley, CA** (100°F on March 20), reported its earliest triple-digit heat, breaking its record established on March 25, 1930. Meanwhile, monthly record highs were set or tied on March 20 in locations such as **Cottonwood, AZ** (92°F), **Grand Junction, CO** (81°F), and **Ely, NV** (76°F). **Grand Junction's** reading tied a monthly record initially established on March 19, 1907, and tied on March 26, 1971.

Record warmth reached the **High Plains** on Thursday, when daily-record highs in **Montana** included 70°F in **Miles City** and **Havre**. A day later, highs soared to daily-record levels in locations such as **McCook, NE** (87°F), and **Childress, TX** (91°F). In **South Dakota**, **Mitchell** (80°F) posted a daily-record high on March 19, following a 6.5-inch snowfall on March 15-16.

Mostly dry weather accompanied near-normal temperatures in **Alaska**. Mild air arrived across most of the State at week's end. By March 21, **Yakutat** (53°F) posted a daily-record high, while **McGrath's** high (36°F) climbed 49°F from its low of -13°F. Meanwhile in **Hawaii**, very heavy showers diminished across the **Big Island** early in the week, followed by a period of cool weather that held statewide temperatures 1 to 3°F below normal. On March 14-15, **Big Island** 24-hour totals included 11.55 inches in **Honokaa**, 8.93 inches in **Waiakea Uka**, and 7.82 inches in **Mountain View**. By March 19, **Kahului, Maui**, noted a daily-record low of 56°F. At week's end, widespread showers overspread the **western Hawaiian islands**. On March 20-21, 24-hour totals on **Oahu** reached 2.53 inches at the **Wilson Tunnel** and 2.47 inches at the **Manoa Lyon Arboretum**.

National Weather Data for Selected Cities

Weather Data for the Week Ending March 20, 2004

Data Provided by Climate Prediction Center (301-763-8000, Ext. 7503)

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP. °F		PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN, SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN, SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	75	50	85	40	62	7	0.49	-0.94	0.24	2.40	61	11.10	82	89	40	0	0	3	0
	HUNTSVILLE	70	46	86	38	58	5	0.98	-0.59	0.64	4.96	112	15.14	102	90	55	0	0	3	1
	MOBILE	78	54	84	48	66	5	0.26	-1.43	0.21	0.42	9	14.70	94	89	45	0	0	3	0
	MONTGOMERY	79	51	87	45	65	7	0.24	-1.21	0.22	0.56	13	10.93	74	83	35	0	0	2	0
AK	ANCHORAGE	31	18	37	9	25	-1	0.01	-0.12	0.01	0.52	127	1.74	95	72	56	0	7	1	0
	BARROW	-5	-22	20	-42	-14	0	0.12	0.12	0.11	0.12	1200	0.27	113	82	75	0	7	2	0
	FAIRBANKS	23	-2	37	-22	10	-2	0.00	-0.06	0.00	0.00	0	0.66	61	83	75	0	7	0	0
	JUNEAU	39	27	40	20	33	-1	0.80	0.05	0.44	3.39	145	14.94	134	92	77	0	6	3	0
	KODIAK	36	26	41	19	31	-2	0.66	-0.50	0.36	3.30	99	20.62	120	77	52	0	6	3	0
	NOME	19	4	29	-14	12	2	0.09	-0.02	0.06	0.57	173	1.20	60	88	80	0	7	3	0
AZ	FLAGSTAFF	66	26	72	23	46	9	0.00	-0.57	0.00	0.76	42	2.58	40	74	15	0	7	0	0
	PHOENIX	90	61	95	59	76	13	0.00	-0.24	0.00	1.30	181	3.14	135	47	23	4	0	0	0
	TUCSON	86	53	91	51	69	10	0.00	-0.17	0.00	0.68	121	1.93	79	57	28	2	0	0	0
	YUMA	95	63	99	60	79	12	0.00	-0.06	0.00	0.41	256	1.41	172	41	27	7	0	0	0
AR	FORT SMITH	70	46	81	34	58	5	2.02	1.11	1.11	3.66	145	8.25	110	97	53	0	0	5	1
	LITTLE ROCK	71	49	81	39	60	6	1.42	0.30	0.68	3.20	107	11.12	112	96	49	0	0	6	1
CA	BAKERSFIELD	88	58	93	54	73	16	0.00	-0.31	0.00	0.08	9	2.30	69	67	44	2	0	0	0
	FRESNO	83	55	87	52	69	13	0.01	-0.48	0.01	1.19	80	3.75	65	88	57	0	0	1	0
	LOS ANGELES	63	55	66	54	59	1	0.00	-0.52	0.00	0.78	46	5.88	75	97	83	0	0	0	0
	REDDING	83	50	88	45	67	14	0.00	-1.16	0.00	0.95	27	14.05	91	80	28	0	0	0	0
	SACRAMENTO	81	49	82	46	65	10	0.00	-0.61	0.00	0.29	15	7.46	80	87	32	0	0	0	0
	SAN DIEGO	66	56	68	55	61	1	0.18	-0.33	0.18	0.39	26	3.54	61	91	78	0	0	1	0
	SAN FRANCISCO	78	52	82	47	65	11	0.00	-0.71	0.00	0.07	3	7.68	72	83	65	0	0	0	0
	STOCKTON	81	46	84	41	63	8	0.00	-0.50	0.00	0.56	36	6.01	90	86	56	0	0	0	0
CO	ALAMOSA	62	21	72	18	42	9	0.00	-0.09	0.00	0.07	28	1.23	173	75	28	0	7	0	0
	CO SPRINGS	62	33	76	28	47	9	0.00	-0.24	0.00	0.34	58	1.33	109	60	20	0	4	0	0
	DENVER INTL	65	33	78	23	49	10	0.00	-0.20	0.00	0.08	14	0.52	50	59	21	0	4	0	0
	GRAND JUNCTION	69	36	81	32	52	8	0.00	-0.22	0.00	0.00	0	1.48	87	53	25	0	2	0	0
	PUEBLO	69	34	83	28	52	10	0.00	-0.22	0.00	0.37	70	1.53	137	56	26	0	2	0	0
CT	BRIDGEPORT	40	27	58	22	34	-6	0.77	-0.19	0.30	2.01	78	6.03	65	85	60	0	6	5	0
	HARTFORD	39	23	53	18	31	-8	0.37	-0.52	0.14	0.85	35	4.08	44	87	51	0	7	6	0
DC	WASHINGTON	53	36	64	33	45	-2	0.64	-0.19	0.38	1.91	81	5.55	68	83	47	0	0	5	0
DE	WILMINGTON	47	31	59	25	39	-4	1.32	0.41	0.70	2.54	100	6.53	74	93	48	0	6	6	1
FL	DAYTONA BEACH	77	55	79	49	66	1	1.05	0.17	0.71	1.09	45	6.85	83	96	49	0	0	2	1
	JACKSONVILLE	79	51	84	45	65	3	1.25	0.34	0.95	1.36	55	7.49	80	97	45	0	0	2	1
	KEY WEST	79	71	82	68	75	1	0.07	-0.35	0.07	0.07	6	5.30	110	90	68	0	0	1	0
	MIAMI	81	68	83	62	75	2	0.27	-0.29	0.18	0.27	18	5.88	108	94	63	0	0	2	0
	ORLANDO	80	58	84	53	69	1	0.67	-0.16	0.49	0.67	30	8.47	120	97	53	0	0	2	0
	PENSACOLA	76	56	81	50	66	5	0.72	-0.78	0.70	0.95	23	11.75	83	94	54	0	0	3	1
	TALLAHASSEE	79	48	85	40	64	2	0.02	-1.50	0.02	0.08	2	10.74	75	92	46	0	0	1	0
	TAMPA	79	60	84	55	70	2	1.12	0.50	1.02	1.12	60	8.87	130	93	52	0	0	3	1
	WEST PALM BEACH	81	67	83	60	74	3	1.10	0.23	1.08	1.13	51	5.87	69	92	65	0	0	2	1
GA	ATHENS	73	46	80	38	60	6	0.19	-0.94	0.15	0.34	10	7.15	58	80	44	0	0	2	0
	ATLANTA	73	50	79	45	61	6	0.07	-1.16	0.06	0.41	11	7.86	59	77	50	0	0	2	0
	AUGUSTA	77	45	83	34	61	4	0.13	-0.91	0.13	0.37	12	7.90	68	93	55	0	0	1	0
	COLUMBUS	78	52	85	43	65	7	0.13	-1.19	0.13	0.20	5	8.12	62	80	30	0	0	1	0
	MACON	80	48	86	39	64	7	0.06	-1.04	0.05	0.10	3	10.34	81	84	34	0	0	2	0
	SAVANNAH	76	51	84	40	63	3	0.01	-0.82	0.01	0.08	4	4.88	54	91	43	0	0	1	0
HI	HILO	77	66	79	63	71	-1	3.59	0.20	2.18	6.57	74	27.06	98	89	78	0	0	5	2
	HONOLULU	80	65	82	61	72	-2	0.02	-0.37	0.02	0.55	43	16.90	266	78	64	0	0	1	0
	KAHULUI	77	63	78	58	70	-3	1.00	0.48	0.81	1.82	125	12.80	169	90	76	0	0	3	1
	LIHUE	76	64	79	59	70	-3	0.08	-0.72	0.04	1.39	60	13.48	133	84	67	0	0	3	0
ID	BOISE	64	37	72	31	51	7	0.00	-0.30	0.00	0.31	36	3.62	107	65	37	0	1	0	0
	LEWISTON	63	39	71	32	51	6	0.00	-0.25	0.00	0.17	26	3.21	117	64	44	0	1	0	0
	POCATELLO	59	34	66	30	47	9	0.00	-0.30	0.00	0.13	15	3.50	116	74	41	0	2	0	0
IL	CHICAGO/O'HARE	43	28	62	23	36	-2	0.28	-0.32	0.11	1.50	101	3.61	74	90	66	0	6	4	0
	MOLINE	48	29	60	25	39	0	0.48	-0.19	0.17	1.99	118	4.01	84	85	59	0	6	5	0
	PEORIA	50	30	65	26	40	0	0.43	-0.22	0.32	1.84	108	3.11	64	93	47	0	5	4	0
	ROCKFORD	45	28	60	23	36	-1	0.22	-0.32	0.09	1.59	120	2.81	69	89	62	0	7	5	0
	SPRINGFIELD	52	31	69	26	42	0	0.36	-0.36	0.18	1.81	93	3.67	68	91	65	0	5	5	0
IN	EVANSVILLE	59	35	68	27	47	0	0.73	-0.24	0.50	1.87	70	5.41	62	94	61	0	2	3	1
	FORT WAYNE	43	29	59	25	36	-3	0.27	-0.37	0.09	1.50	89	4.47	79	91	63	0	5	5	0
	INDIANAPOLIS	51	32	68	28	41	-1	0.39	-0.39	0.18	1.64	76	7.06	100	95	58	0	5	6	0
	SOUTH BEND	43	29	60	24	36	-2	0.21	-0.44	0.09	2.09	124	4.41	74	90	68	0	4	5	0
IA	BURLINGTON	48	30	61	25	39	-2	0.22	-0.46	0.08	1.59	89	3.30	71	96	53	0	5	5	0
	CEDAR RAPIDS	44	27	58	23	36	-1	0.25	-0.26	0.12	2.27	182	4.15	122	97	59	0	7	4	0
	DES MOINES	48	30	66	27	39	0	0.48	-0.02	0.41	1.87	153	4.84	141	87	62	0	5	4	0
	DUBUQUE	42	27	53	24	35	-1	0.22	-0.37	0.12	2.28	153	3.96	95	86	65	0	7	5	0
	SIOUX CITY	46	26	69	13	36	-1	0.41	-0.06	0.15	1.70	149	3.62	154	83	67	0	5	3	0
	WATERLOO	44	27	59	22	36	0	0.28	-0.20	0.11	1.83	154	3.53	115	83	60	0	6	3	0
KS	CONCORDIA	59	35	69	30	47	4	0.26	-0.29	0.26	1.83	126	5.00	176	71	55	0	3	1	0
	DODGE CITY	67	34	80	23	50	5	0.00	-0.43	0.00	1.93	179	3.01	128	85	31	0	3	0	0
	GOODLAND	65	30	85	25	47	7	0.00	-0.28	0.00	0.23	31	1.31	81	73	31	0	5	0	0
	TOPEKA	60	36	73	31	48	3	0.26	-0.33	0.25	2.80	182	5.34	146	84	51	0	2	2	0

Based on 1971-2000 normals -999 Not Available

Weather Data for the Week Ending March 20, 2004

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP. °F		PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	65	39	74	30	52	6	0.04	-0.59	0.04	2.70	160	5.33	150	86	57	0	2	1	0
KY	JACKSON	57	37	76	30	47	-1	0.93	-0.05	0.49	2.53	88	10.53	104	94	47	0	2	5	0
	LEXINGTON	55	35	72	31	45	-1	0.58	-0.42	0.33	3.47	120	8.28	87	85	65	0	3	5	0
	LOUISVILLE	59	38	71	33	49	1	0.69	-0.31	0.36	3.07	107	9.50	101	82	43	0	0	4	0
	PADUCAH	64	39	75	34	52	4	0.88	-0.08	0.49	2.90	108	7.59	75	94	43	0	0	5	0
LA	BATON ROUGE	77	55	82	46	66	5	1.26	0.13	1.25	1.69	53	16.97	117	99	52	0	0	2	1
	LAKE CHARLES	76	58	80	51	67	6	3.18	2.37	3.17	3.31	148	20.21	183	99	63	0	0	2	1
	NEW ORLEANS	75	58	80	52	66	3	0.32	-0.85	0.32	0.50	15	11.93	82	97	65	0	0	1	0
	SHREVEPORT	75	54	86	47	65	6	1.17	0.26	1.15	4.14	156	16.44	143	92	55	0	0	3	1
ME	CARIBOU	28	7	38	0	18	-8	0.09	-0.49	0.09	0.77	48	2.87	43	75	38	0	7	1	0
	PORTLAND	36	22	48	17	29	-5	0.37	-0.58	0.17	0.59	23	2.61	27	89	43	0	7	6	0
MD	BALTIMORE	51	31	61	27	41	-3	0.63	-0.27	0.39	2.31	90	6.13	68	89	61	0	5	3	0
MA	BOSTON	38	28	52	24	33	-6	0.43	-0.44	0.22	0.84	35	3.31	34	82	50	0	6	3	0
	WORCESTER	35	22	46	20	28	-7	0.63	-0.35	0.30	1.24	47	4.13	42	94	49	0	7	7	0
MI	ALPENA	37	18	53	12	28	-1	0.03	-0.48	0.02	1.14	88	2.37	54	90	56	0	7	2	0
	GRAND RAPIDS	42	29	57	24	35	0	0.34	-0.26	0.28	2.87	195	5.91	117	85	51	0	7	3	0
	HOUGHTON LAKE	35	20	48	14	28	-2	0.21	-0.26	0.19	1.93	161	3.82	94	89	63	0	7	2	0
	LANSING	40	27	57	22	34	-1	0.52	-0.01	0.38	2.40	185	3.86	89	88	69	0	7	3	0
	MUSKEGON	42	30	55	26	36	1	0.39	-0.15	0.24	3.42	250	5.36	104	88	57	0	6	3	0
	TRAVERSE CITY	38	25	49	15	32	1	0.16	-0.28	0.13	1.76	161	4.37	75	88	49	0	7	3	0
MN	DULUTH	36	18	44	8	27	1	0.07	-0.32	0.05	0.47	49	3.84	132	84	63	0	7	2	0
	INT'L FALLS	36	8	46	-9	22	-2	0.02	-0.19	0.02	0.39	75	1.18	59	90	49	0	7	1	0
	MINNEAPOLIS	42	27	53	22	35	2	0.14	-0.30	0.09	1.16	110	2.48	86	76	62	0	6	2	0
	ROCHESTER	40	26	49	19	33	2	0.16	-0.27	0.12	1.33	132	3.37	125	85	69	0	6	3	0
	ST. CLOUD	41	24	56	18	32	3	0.31	-0.04	0.21	0.70	90	1.90	89	89	60	0	7	3	0
MS	JACKSON	76	51	85	43	64	7	0.19	-1.12	0.11	1.25	35	11.98	87	92	44	0	0	2	0
	MERIDIAN	77	48	85	41	63	5	0.01	-1.58	0.01	1.76	39	12.83	81	97	49	0	0	1	0
	TUPELO	70	47	84	37	58	4	1.51	0.07	0.77	5.36	130	14.90	107	95	60	0	0	4	1
MO	COLUMBIA	56	35	70	31	46	1	0.24	-0.48	0.11	2.24	115	5.31	90	97	52	0	2	4	0
	KANSAS CITY	56	35	72	29	46	1	0.23	-0.32	0.23	1.56	104	3.46	87	92	47	0	1	1	0
	SAINT LOUIS	58	37	74	34	48	2	0.20	-0.63	0.08	1.86	83	6.68	100	96	71	0	0	4	0
	SPRINGFIELD	61	36	71	30	49	2	0.25	-0.63	0.20	4.16	182	8.60	129	84	53	0	2	2	0
MT	BILLINGS	57	34	71	23	46	9	0.02	-0.23	0.02	0.11	17	0.95	47	70	28	0	3	1	0
	BUTTE	52	28	62	18	40	9	0.00	-0.19	0.00	0.09	18	0.61	41	74	29	0	4	0	0
	GLASGOW	41	24	50	14	33	1	0.00	-0.09	0.00	0.01	4	1.40	163	92	68	0	7	0	0
	GREAT FALLS	53	27	68	15	40	8	0.00	-0.22	0.00	0.19	33	0.49	28	73	27	0	5	0	0
	HAVRE	50	27	70	20	39	8	0.00	-0.16	0.00	0.01	2	0.26	21	85	59	0	7	0	0
	KALISPELL	51	28	64	21	39	4	0.03	-0.20	0.01	0.48	70	2.91	88	84	55	0	5	3	0
	MISSOULA	54	32	68	21	43	5	0.09	-0.12	0.08	0.36	63	1.85	77	81	46	0	4	2	0
NE	GRAND ISLAND	58	33	73	28	45	6	0.03	-0.45	0.03	0.32	27	2.64	109	80	54	0	3	1	0
	LINCOLN	56	33	74	29	44	4	0.56	0.04	0.56	1.70	131	3.68	140	76	53	0	4	1	1
	NORFOLK	51	30	73	25	41	3	0.49	0.03	0.26	1.63	142	3.72	150	80	61	0	5	3	0
	NORTH PLATTE	62	28	86	17	45	7	0.00	-0.28	0.00	0.04	6	0.90	56	81	28	0	6	0	0
	OMAHA	52	30	73	24	41	1	0.60	0.10	0.48	1.92	152	4.48	158	80	61	0	4	3	0
	SCOTTSBLUFF	62	30	81	19	46	8	0.09	-0.17	0.09	0.18	27	0.90	51	86	67	0	4	1	0
	VALENTINE	56	31	85	24	44	8	0.18	-0.07	0.15	0.19	30	1.18	84	84	49	0	4	2	0
NV	ELY	67	28	76	22	47	11	0.00	-0.22	0.00	0.03	5	0.87	40	73	26	0	6	0	0
	LAS VEGAS	84	56	90	52	70	11	0.00	-0.12	0.00	0.23	56	1.70	101	39	22	1	0	0	0
	RENO	74	38	81	35	56	12	0.00	-0.18	0.00	1.25	216	3.77	140	59	36	0	0	0	0
	WINNEMUCCA	71	29	79	24	50	9	0.00	-0.19	0.00	0.03	6	1.60	82	74	29	0	6	0	0
NH	CONCORD	38	21	47	13	29	-5	0.43	-0.26	0.21	0.69	37	2.46	34	90	42	0	7	6	0
NJ	NEWARK	45	30	60	25	37	-6	1.15	0.17	0.61	2.70	101	6.97	73	84	49	0	5	5	1
NM	ALBUQUERQUE	72	42	82	36	57	9	0.00	-0.14	0.00	0.63	166	1.90	145	42	17	0	0	0	0
NY	ALBANY	38	21	46	16	29	-7	0.40	-0.30	0.22	0.96	51	3.45	53	93	58	0	7	4	0
	BINGHAMTON	33	20	40	15	27	-6	0.82	0.16	0.42	1.42	79	4.39	64	86	60	0	7	6	0
	BUFFALO	35	22	47	19	29	-6	1.31	0.63	0.74	2.32	126	6.42	87	91	59	0	7	4	1
	ROCHESTER	37	23	49	21	30	-5	1.08	0.50	0.79	1.42	91	4.95	83	88	59	0	7	5	1
	SYRACUSE	36	22	43	16	29	-5	0.67	-0.02	0.31	1.01	55	3.99	61	91	51	0	7	5	0
NC	ASHEVILLE	62	37	69	32	50	3	0.53	-0.51	0.19	0.95	32	6.01	55	90	59	0	3	4	0
	CHARLOTTE	65	43	71	38	54	1	0.46	-0.55	0.14	0.52	18	4.99	48	94	53	0	0	4	0
	GREENSBORO	58	40	65	36	49	-1	0.79	-0.09	0.49	1.29	52	4.59	50	95	58	0	0	4	0
	HATTERAS	56	41	61	34	49	-4	0.70	-0.45	0.68	1.26	39	6.63	51	93	65	0	0	2	1
	RALEIGH	60	40	68	34	50	-1	1.72	0.80	1.20	2.06	77	6.61	65	98	77	0	0	5	1
	WILMINGTON	67	44	75	35	56	1	0.81	-0.15	0.56	1.06	38	8.53	78	98	56	0	0	2	1
ND	BISMARCK	46	26	61	20	36	8	0.14	-0.04	0.12	0.37	80	1.27	89	84	60	0	6	2	0
	DICKINSON	44	24	55	14	34	3	0.13	-0.01	0.07	0.18	64	0.74	69	92	50	0	6	2	0
	FARGO	38	21	56	14	30	2	0.24	-0.03	0.20	0.73	107	2.13	105	89	69	0	6	2	0
	GRAND FORKS	33	15	43	8	24	-2	0.07	-0.12	0.04	0.37	74	1.37	78	93	73	0	7	2	0
	JAMESTOWN	39	21	54	12	30	1	0.03	-0.16	0.02	0.14	29	0.47	29	94	62	0	7	2	0
	WILLISTON	39	23	47	17	31	1	0.02	-0.15	0.01	0.19	46	1.68	125	89	69	0	7	2	0
OH	AKRON-CANTON	40	27	51	23	33	-5	0.97	0.25	0.38	1.92	97	6.49	96	91	68	0	6	5	0
	CINCINNATI	51	31	69	24	41	-4	0.56	-0.33	0.26	1.86	77	7.86	95	84	61	0	5	5	0
	CLEVELAND	40	28	51	24	34	-4	1.24	0.58	0.52	2.43	137	5.88	90	95	64	0	6	7	1
	COLUMBUS	47	31	70	27	39	-4	0.98	0.33	0.40	1.51	85	8.62	132	84	57	0	4	5	0
	DAYTON	45	29	67	22	37	-4	0.74	0.00	0.26	1.34	68	7.27	106	91	62	0	5	4	0
	MANSFIELD	40	28	53	22	34	-3	0.83	0.06	0.45	1.56	79	6.17	91	96	59	0	6	5	0

Based on 1971-2000 normals

-999 Not Available

Weather Data for the Week Ending

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS TEMP °F		NUMBER OF DAYS PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	42	28	56	23	35	-3	0.42	-0.17	0.16	1.46	95	3.25	61	90	58	0	6	4	0
	YOUNGSTOWN	39	28	49	22	32	-5	1.30	0.80	0.74	2.20	119	6.81	109	86	64	0	6	5	1
OK	OKLAHOMA CITY	73	45	83	36	59	7	0.01	-0.65	0.01	2.82	152	5.73	122	92	43	0	0	1	0
	TULSA	69	42	80	32	55	3	0.01	-0.82	0.01	2.97	131	6.53	112	87	63	0	1	1	0
OR	ASTORIA	55	41	65	37	48	2	0.46	-1.18	0.33	1.97	41	21.84	98	91	78	0	0	4	0
	BURNS	61	29	69	27	45	8	0.00	-0.27	0.00	0.18	22	2.90	94	83	51	0	6	0	0
	EUGENE	63	38	71	32	51	5	0.11	-1.18	0.06	0.68	18	11.86	66	93	71	0	1	2	0
	MEDFORD	72	40	75	34	56	9	0.00	-0.40	0.00	0.60	49	6.94	120	84	39	0	0	0	0
	PENDLETON	64	40	71	30	52	6	0.00	-0.28	0.00	0.47	59	4.55	132	89	45	0	2	0	0
	PORTLAND	60	43	65	36	52	5	0.05	-0.76	0.03	0.59	24	9.40	80	87	66	0	0	2	0
	SALEM	62	39	69	32	50	3	0.06	-0.84	0.03	0.46	16	12.26	89	89	65	0	2	2	0
PA	ALLENTOWN	43	25	57	19	34	-5	0.81	-0.01	0.39	1.47	85	6.25	73	85	51	0	7	5	0
	ERIE	36	23	46	15	30	-7	0.72	0.02	0.41	1.35	72	6.17	92	84	63	0	6	3	0
	MIDDLETOWN	47	30	57	25	39	-3	0.78	0.06	0.42	1.69	80	5.57	71	89	47	0	6	4	0
	PHILADELPHIA	47	32	59	28	39	-5	1.29	0.41	0.71	2.98	123	7.18	83	79	49	0	6	5	1
	PITTSBURGH	45	29	59	26	37	-3	1.17	0.45	0.63	1.97	99	9.19	130	94	58	0	7	5	1
	WILKES-BARRE	39	24	52	20	32	-7	0.64	0.03	0.33	1.27	78	5.27	86	87	48	0	7	5	0
	WILLIAMSPORT	42	25	53	21	33	-6	1.52	0.80	0.74	2.10	107	6.40	86	90	57	0	7	6	1
RI	PROVIDENCE	40	26	56	19	33	-6	0.53	-0.49	0.18	1.20	44	4.82	46	81	57	0	6	5	0
SC	BEAUFORT	76	51	84	41	64	6	0.04	-0.81	0.04	0.15	7	5.85	60	91	42	0	0	1	0
	CHARLESTON	75	50	84	40	63	5	0.08	-0.86	0.08	0.24	9	6.21	64	93	42	0	0	1	0
	COLUMBIA	74	47	79	36	60	4	0.33	-0.72	0.24	0.37	13	6.22	54	86	48	0	0	2	0
	GREENVILLE	68	45	74	38	56	4	0.36	-0.85	0.15	0.50	14	5.56	46	88	37	0	0	4	0
SD	ABERDEEN	46	26	66	21	36	5	0.02	-0.29	0.02	0.47	64	2.20	129	85	61	0	6	1	0
	HURON	48	28	78	21	38	5	0.19	-0.20	0.12	0.28	30	1.84	92	88	55	0	6	3	0
	RAPID CITY	57	30	78	18	43	8	0.15	-0.08	0.07	0.80	143	1.96	141	78	35	0	3	2	0
	SIOUX FALLS	45	26	70	16	36	3	0.59	0.16	0.22	1.03	103	2.66	132	83	63	0	6	3	0
TN	BRISTOL	61	39	73	32	50	3	0.83	-0.05	0.36	3.19	124	9.50	100	92	45	0	1	5	0
	CHATTANOOGA	69	44	81	40	56	4	0.66	-0.77	0.35	3.14	77	11.62	81	91	50	0	0	4	0
	KNOXVILLE	64	42	76	38	53	3	1.24	0.05	0.49	3.80	112	10.18	85	94	46	0	0	5	0
	MEMPHIS	68	49	81	38	59	5	1.52	0.26	1.15	2.97	85	10.62	88	91	49	0	0	4	1
	NASHVILLE	65	44	79	40	54	3	0.86	-0.25	0.34	3.41	107	12.78	118	88	41	0	0	6	0
TX	ABILENE	76	54	86	42	65	8	0.02	-0.28	0.01	1.12	129	5.67	191	95	64	0	0	2	0
	AMARILLO	70	40	89	33	55	7	0.01	-0.24	0.01	1.50	231	3.62	198	80	28	0	0	1	0
	AUSTIN	77	60	82	54	69	7	1.49	1.04	0.85	2.55	180	10.43	197	92	73	0	0	5	2
	BEAUMONT	75	59	80	55	67	4	1.39	0.53	1.39	1.54	66	14.51	128	99	66	0	0	1	1
	BROWNSVILLE	81	66	85	59	74	5	3.44	3.26	3.23	3.47	754	6.17	206	96	73	0	0	3	1
	CORPUS CHRISTI	78	65	81	60	71	5	1.04	0.68	0.83	1.07	97	5.21	114	98	78	0	0	2	1
	DEL RIO	79	63	83	56	71	7	0.03	-0.16	0.02	2.55	455	4.13	198	95	73	0	0	2	0
	EL PASO	80	48	88	44	64	7	0.00	-0.03	0.00	0.80	533	1.22	123	59	16	0	0	0	0
	FORT WORTH	76	55	84	45	65	7	0.16	-0.51	0.16	1.53	75	8.42	134	92	55	0	0	1	0
	GALVESTON	73	63	75	60	68	3	2.27	1.64	2.26	2.42	139	11.38	135	99	82	0	0	2	1
	HOUSTON	78	63	83	61	71	8	1.42	0.67	1.36	1.77	85	13.31	152	94	69	0	0	3	1
	LUBBOCK	75	46	86	40	61	9	0.00	-0.15	0.00	1.86	454	5.64	348	86	53	0	0	0	0
	MIDLAND	77	52	85	47	65	9	0.01	-0.06	0.01	1.29	478	2.76	200	96	63	0	0	1	0
	SAN ANGELO	77	55	86	46	66	8	0.02	-0.17	0.01	1.69	273	4.78	183	95	67	0	0	2	0
	SAN ANTONIO	77	61	81	55	69	6	0.16	-0.23	0.15	1.73	145	5.78	126	98	70	0	0	3	0
	VICTORIA	77	62	80	57	69	5	0.42	-0.08	0.37	1.21	85	7.45	126	100	81	0	0	6	0
	WACO	75	58	83	51	67	8	0.79	0.27	0.51	2.30	141	11.57	194	95	81	0	0	3	1
	WICHITA FALLS	77	50	88	41	64	9	0.00	-0.50	0.00	1.97	140	6.46	158	89	62	0	0	0	0
UT	SALT LAKE CITY	65	41	75	36	53	9	0.00	-0.43	0.00	0.29	24	2.92	75	66	29	0	0	0	0
VT	BURLINGTON	35	19	41	12	27	-5	0.18	-0.35	0.08	0.47	34	1.79	34	85	48	0	7	3	0
VA	LYNCHBURG	58	34	66	26	46	-1	0.76	-0.11	0.65	1.29	52	5.07	56	83	46	0	3	2	1
	NORFOLK	58	39	64	32	49	0	0.73	-0.20	0.58	1.76	67	5.17	52	90	57	0	2	3	1
	RICHMOND	56	36	65	30	46	-2	1.58	0.64	1.40	2.12	79	5.54	60	97	62	0	2	3	1
	ROANOKE	59	37	69	32	48	0	1.09	0.22	0.80	1.55	63	6.21	71	76	51	0	2	3	1
	WASH/DULLES	52	31	63	26	42	-2	0.40	-0.40	0.27	1.77	78	5.11	63	83	57	0	5	4	0
WA	OLYMPIA	54	37	61	27	46	2	0.68	-0.49	0.35	1.60	46	13.68	80	92	77	0	1	3	0
	QUILLAYUTE	50	40	55	31	45	1	1.35	-1.08	0.52	6.29	85	25.49	76	97	79	0	1	6	1
	SEATTLE-TACOMA	53	42	60	37	47	1	0.19	-0.64	0.12	0.94	38	9.74	83	88	76	0	0	3	0
	SPOKANE	55	33	61	28	44	4	0.00	-0.33	0.00	0.16	16	3.04	70	76	43	0	5	0	0
	YAKIMA	64	33	72	27	48	6	0.00	-0.14	0.00	0.08	20	3.05	128	68	48	0	4	0	0
WV	BECKLEY	52	34	69	26	43	0	1.43	0.61	0.90	2.93	125	7.83	92	79	60	0	2	6	1
	CHARLESTON	54	32	77	30	43	-3	1.21	0.33	0.44	3.27	128	9.39	104	96	50	0	4	6	0
	ELKINS	51	27	72	22	39	-2	1.89	1.01	0.73	4.33	170	9.86	108	95	45	0	7	5	2
	HUNTINGTON	55	34	77	29	44	-2	0.80	-0.07	0.35	2.93	117	8.96	102	91	51	0	2	5	0
WI	EAU CLAIRE	40	22	44	14	31	-1	0.34	-0.09	0.22	1.52	152	4.46	157	90	51	0	7	2	0
	GREEN BAY	38	25	49	21	32	0	0.45	-0.03	0.32	2.56	219	5.42	160	92	65	0	7	4	0
	LA CROSSE	45	28	52	20	37	2	0.21	-0.25	0.15	2.62	252	4.87	151	83	47	0	6	2	0
	MADISON	42	26	55	21	34	0	0.40	-0.12	0.23	1.99	159	4.05	107	86	60	0	7	4	0
	MILWAUKEE	41	29	59	25	35	0	0.39	-0.20	0.15	2.14	150	4.67	95	85	64	0	6	5	0
WY	CASPER	57	26	68	17	41	5	0.00	-0.19	0.00	0.10	18	0.77	44	81	38	0	6	0	0
	CHEYENNE	58	32	73	17	45	11	0.00	-0.24	0.00	0.08	13	0.60	40	55	30	0	4	0	0
	LANDER	56	32	66	22	44	8	0.00	-0.28	0.00	0.00	0	1.64	94	83	38	0	5	0	0
	SHERIDAN	57	31	69	20	44	8	0.15	-0.07	0.08	0.41	76	1.45	77	77	51	0	4	5	0

Based on 1971-2000 normals

-999 Not Available

NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

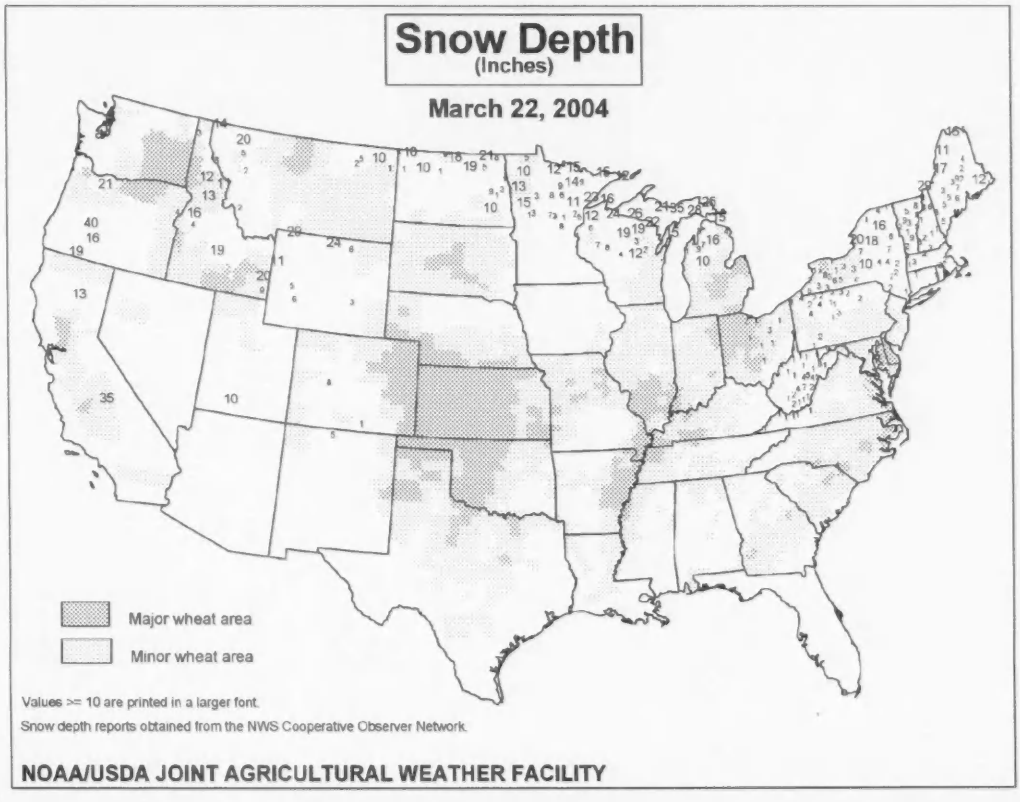
March 15 - 21, 2004

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

A late snowstorm boosted moisture reserves in the eastern Ohio Valley and along the northern Atlantic Coast. Cooler-than-normal temperatures were recorded, with readings as much as 6 degrees F below average. In the Corn Belt, early-week scattered showers and a few snow flurries hindered fieldwork. Moderate precipitation fell in eastern Texas and the lower Mississippi Valley, while the Southeast remained relatively dry, providing good conditions for fieldwork activities. Most areas west of the Mississippi Valley experienced dry, warm conditions, and moisture shortages remained in the High Plains and Pacific Northwest. Record-high temperatures were recorded from the West Coast to the Great Plains and into the Southeast. Melting of snow cover continued. Seasonal showers continued east of the Cascade Mountains.

In Florida, producers were preparing fields for cotton and peanut planting. Dry soil prevented planting in the northern Peninsula. From southern to north-central Texas, wheat fields were headed out, while corn and sorghum planting continued. Grain sorghum was emerged in south-central Texas. The warm weather in Georgia improved pastures, small grains, and winter grazing. Producers continued preparing land for spring planting. Fertilizer was applied to pastures, hay fields, and pecan trees. Corn planting continued around the State. In California, some fields were irrigated to sustain optimal growth. Dryland and irrigated wheat was reported to be in good condition. Alfalfa fields and winter forage showed vigorous growth. Cuttings for hay, silage, or greenchop continued in many areas.


Snow Depth
(Inches)
March 22, 2004
Major wheat area
Minor wheat area
Values >= 10 are printed in a larger font.
Snow depth reports obtained from the NWS Cooperative Observer Network.
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

March 11 ENSO Update

Sea surface temperature (SST) anomalies (departures from average) decreased in most of the equatorial Pacific during February (Fig. 1). By early March, near-average or slightly cooler-than-average SSTs were observed everywhere east of 180°W, with positive anomalies greater than +0.5°C (~1°F) being restricted to the region between Indonesia and 180°W. Since early December 2003, SST anomalies have decreased in all of the Niño regions.

The monthly 850-hPa zonal wind indices, OLR index, 200-hPa zonal wind index, SOI, and EQSOI have exhibited considerable intraseasonal variability since late November in association with tropical Madden-Julian Oscillation (MJO) activity. In spite of that variability, certain average atmospheric patterns have become apparent since November. These include: 1) stronger-than-average easterly winds between 160°E and 150°W, and 2) weaker-than-average convection (drier-than-average conditions) over the central equatorial Pacific. These conditions are consistent with the observed decrease in SST anomalies in the central equatorial Pacific.

A majority of the statistical and coupled model forecasts indicate near neutral conditions in the tropical Pacific (Niño 3.4 SST anomalies between -0.5°C and +0.5°C) through May 2004. Thereafter, the forecasts show increasing spread and greater uncertainty. Given the recent trends and observed oceanic and atmospheric patterns discussed above, it is likely that ENSO-neutral conditions will continue for the next 3-6 months.

This discussion is a consolidated effort of NOAA and its funded institutions. Weekly updates for SST, 850-hPa wind, OLR, and features of the equatorial subsurface thermal structure are available on the Climate Prediction Center web page at http://www.cpc.ncep.noaa.gov (Weekly Update). Forecasts for the evolution of El Niño/La Niña are updated monthly in the Forecast Forum section of CPC's Climate Diagnostics Bulletin.

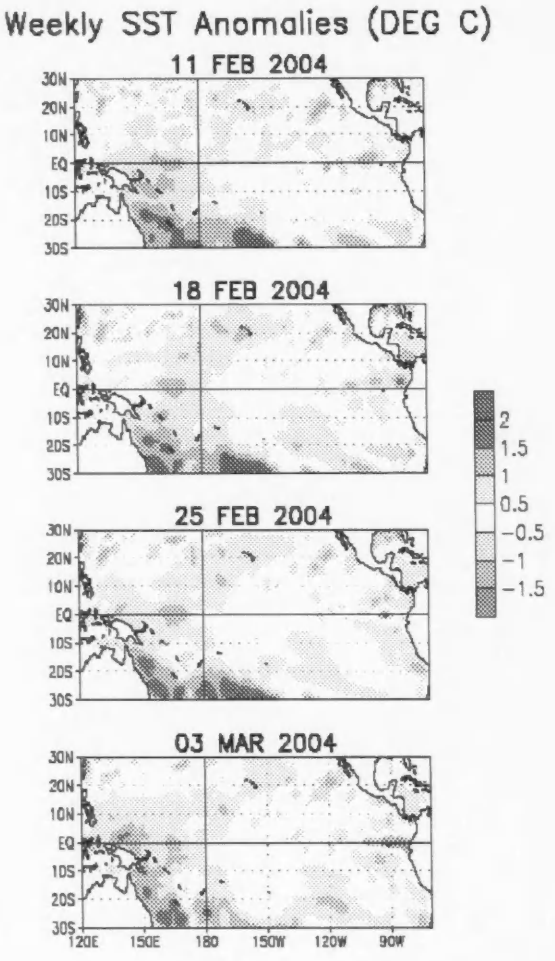


Figure 1. Weekly SST departure (°C) for February-early March, 2004. The SST departures are computed with respect to the 1971-2000 base period means.

International Weather and Crop Summary

March 14 - 20, 2004

International Weather and Crop Highlights and Summaries provided by USDA/WAOB

HIGHLIGHTS

EUROPE: Warmer weather prompted winter grains and oilseeds to start breaking dormancy and promoted spring crop planting.

FSU-WESTERN: In Ukraine and the Southern Region in Russia, near- to above-normal temperatures and generally dry weather caused winter wheat to lose cold hardiness and likely promoted early spring fieldwork.

MIDDLE EAST: Rain and cooler weather benefited greening winter grains in western Iran, while adequate soil moisture existed for spring growth of winter grains in Turkey.

NORTHWESTERN AFRICA: In Northwestern Africa, continued dry, warm weather reduced soil moisture for vegetative to reproductive winter grains in eastern Algeria and Tunisia.

SOUTH AFRICA: Sunny skies spurred late development of corn and other summer crops, following recent weeks of beneficial rain.

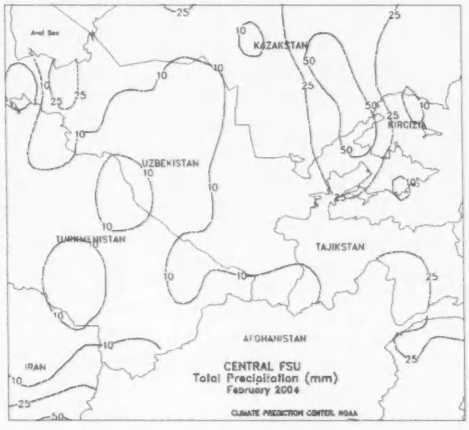
AUSTRALIA: Mostly dry weather in interior Queensland favored summer crop maturation and harvesting, while widespread showers farther south maintained moisture supplies for immature summer crops.

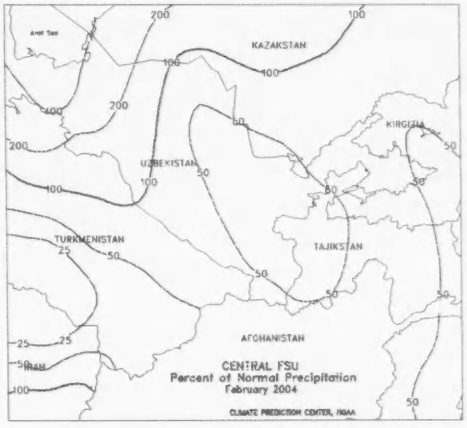
EASTERN ASIA: Dry weather continued along the North China Plain, while showers fell in the Yangtze Valley.

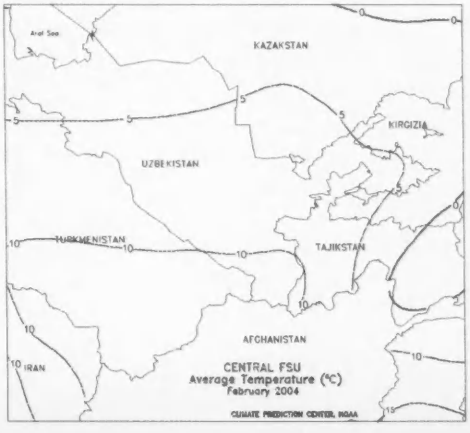
SOUTHEAST ASIA: A tropical storm brought heavy showers to the eastern Philippines.

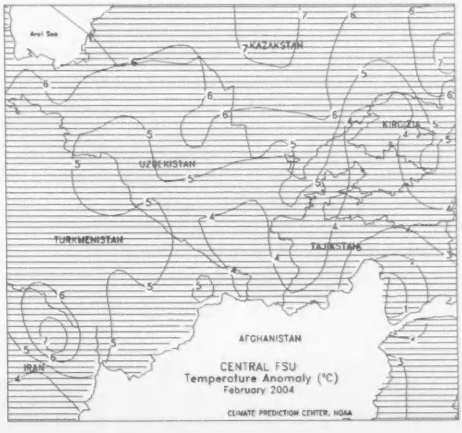
BRAZIL: Dry pockets continued in southern corn and soybean areas, but rainfall was generally seasonable elsewhere.

ARGENTINA: Scattered showers benefited immature summer crops in southern and western growing areas, but unseasonable warmth and dryness returned elsewhere.



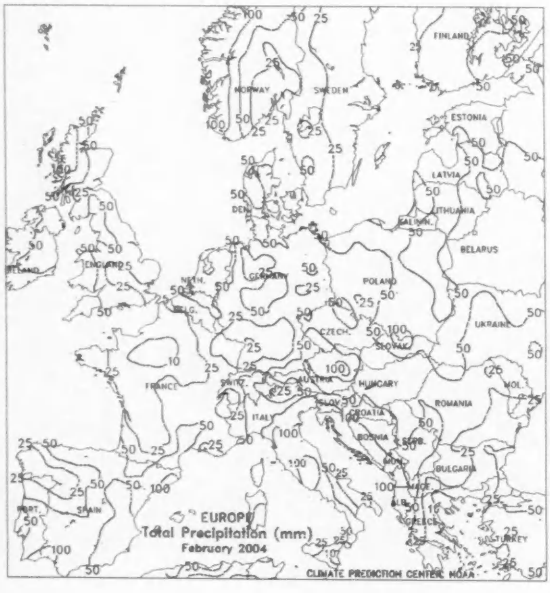


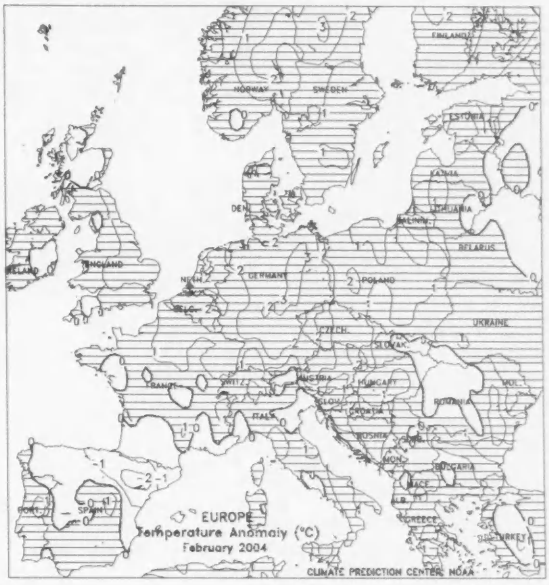


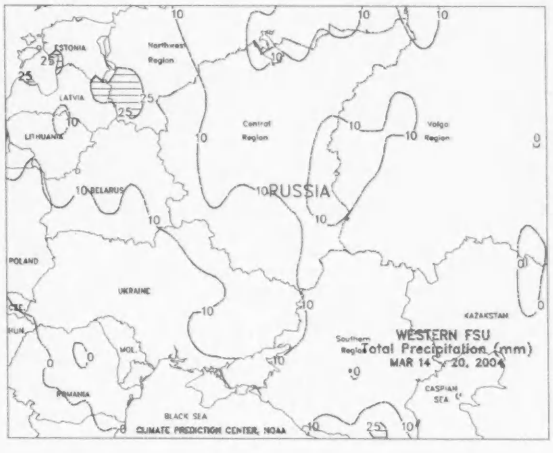


EUROPE

Much warmer weather prevailed across most of Europe, signaling the arrival of spring. Above-normal temperatures prompted winter grains and oilseeds to start breaking dormancy across France, Germany, northern Italy, and the lower Danube River Basin. In the eastern portion of Europe, winter crops lost significant winter hardiness. In fact, minimum temperatures remained above freezing across most of Europe, except across the Alps to eastern Poland and the lower Danube River Basin. Across France, the Low Countries, Germany, and Poland, light rain (5-20 mm) improved topsoil moisture, and heavier rain (10-50 mm) covered most of the United Kingdom. For most areas, adequate soil moisture existed for spring growth, especially in southern Spain, where winter grains were nearing reproduction. Temperatures averaged 3 to 7 degrees C above normal across most of Europe. During February, near- to above-normal precipitation fell across most of Europe, maintaining adequate moisture supplies for upcoming spring growth of dormant winter grains and oilseeds. The moisture was especially beneficial for semidormant to vegetative winter crops in Spain. During the first half of February, drastic temperature changes (very mild then cold weather) stressed winter crops in portions of Slovakia, Hungary, and Poland.

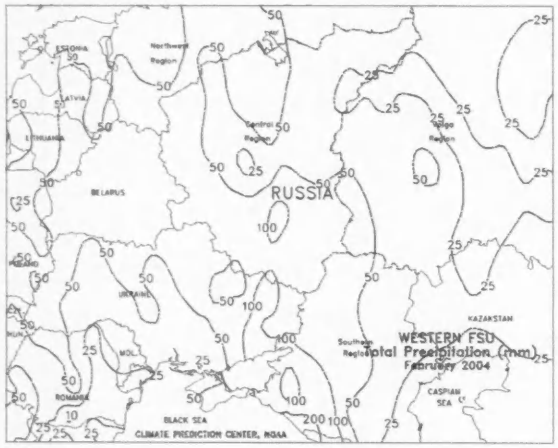






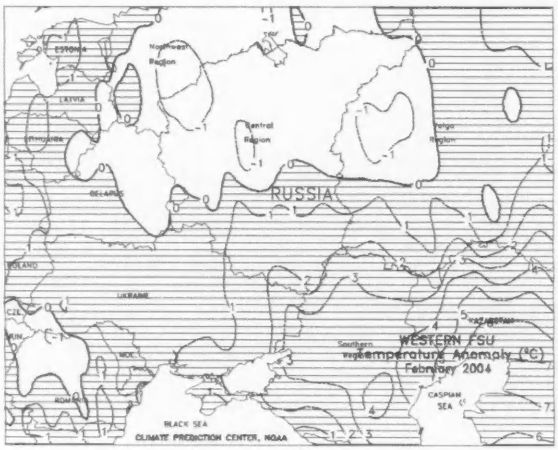
FSU-WESTERN

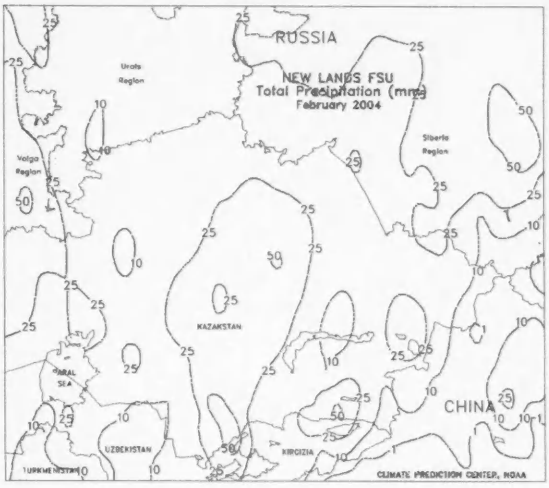
Near- to above-normal temperatures prevailed over most of the region, keeping major winter wheat areas in Ukraine and the Southern Region in Russia snow-free. The mild weather caused further melting of deep snow cover from Belarus eastward across the Central and Volga Regions in Russia. Temperatures averaged 4 to 6 degrees C above normal in Moldova, the western two-thirds of Ukraine, and southwestern Belarus. Temperatures over the remainder of the region averaged 1 to 3 degrees C above normal, except for extreme southern areas in the Southern Region in Russia, where temperatures averaged around normal. Winter wheat was rapidly losing cold hardiness in Ukraine and the southern half of the Southern Region in Russia, with early spring greening likely in southernmost crop areas. Furthermore, maximum temperatures at most locations in these areas ranged from 15 to 25 degrees C, helping to warm topsoils for early spring grain planting. Light if any precipitation (less than 10 mm) fell across southern Belarus, western and central Ukraine, Moldova, and the Southern Region in Russia. Elsewhere, a mixture of light rain and snow (10-32 mm) fell in the Baltics, northern Belarus, eastern Ukraine, and portions of the Central Region. In February, overwintering conditions continued mostly favorable for winter grains in the Baltics, Belarus, Ukraine, and Russia. Above-normal precipitation was observed in most areas, boosting potential moisture reserves. The precipitation that covered the Central and Volga Regions in Russia fell mostly as snow, maintaining a deep snow cover. More than twice the normal amount of precipitation fell as a mixture of rain and snow in Belarus, eastern Ukraine, and the Southern Region in Russia. Temperatures averaged 1 to 3 degrees C above normal in Ukraine, 2 to 4 degrees C above normal in the Southern Region in Russia, and around normal in northern Russia, Belarus, and the Baltics. Despite the mild weather, a few episodes of bitter cold overspread winter grain areas. The extreme cold was of mostly short duration and occurred in areas that were protected by an adequate snow cover, minimizing the threat for significant damage to winter grains.

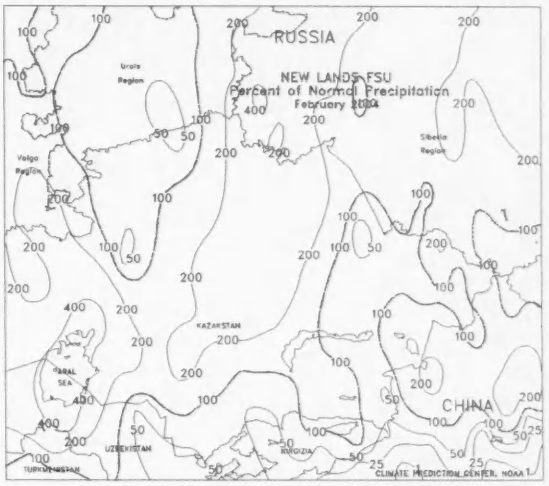

WESTERN FSU
Total Precipitation (mm)
February 2004
RUSSIA
BELARUS
UKRAINE
KAZAKHSTAN
BLACK SEA
CLIMATE PREDICTION CENTER, NOAA

WESTERN FSU
Percent of Normal Precipitation
February 2004
RUSSIA
BELARUS
UKRAINE
KAZAKHSTAN
BLACK SEA
CLIMATE PREDICTION CENTER, NOAA

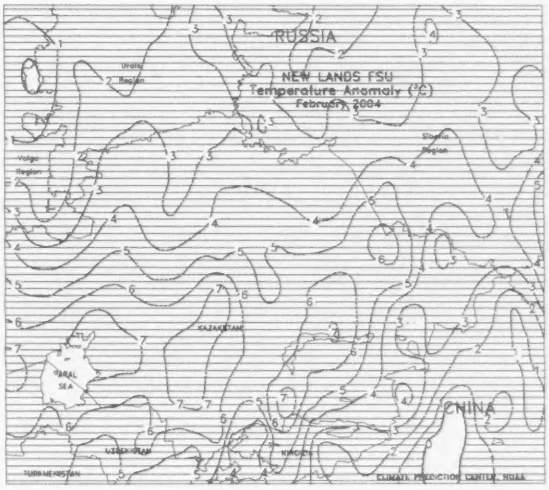
WESTERN FSU
Average Temperature (°C)
February 2004
RUSSIA
BELARUS
UKRAINE
KAZAKHSTAN
BLACK SEA
CLIMATE PREDICTION CENTER, NOAA


WESTERN FSU
Temperature Anomaly (°C)
February 2004
RUSSIA
BELARUS
UKRAINE
KAZAKHSTAN
BLACK SEA
CLIMATE PREDICTION CENTER, NOAA


RUSSIA
NEW LANDS FSU
Total Precipitation (mm)
February 2004
Urals Region
Volga Region
Siberia Region
KAZAKSTAN
ARAL SEA
UZBEKISTAN
KIRGIZIA
TURKMENISTAN
CHINA
CLIMATE PREDICTION CENTER, NOAA


RUSSIA
NEW LANDS FSU
Percent of Normal Precipitation
February 2004
Urals Region
Volga Region
Siberia Region
KAZAKSTAN
ARAL SEA
UZBEKISTAN
KIRGIZIA
TURKMENISTAN
CHINA
CLIMATE PREDICTION CENTER, NOAA

RUSSIA
NEW LANDS FSU
Average Temperature (°C)
February 2004
Urals Region
Volga Region
Siberia Region
KAZAKSTAN
ARAL SEA
UZBEKISTAN
KIRGIZIA
TURKMENISTAN
CHINA
CLIMATE PREDICTION CENTER, NOAA


RUSSIA
NEW LANDS FSU
Temperature Anomaly (°C)
February 2004
Urals Region
Volga Region
Siberia Region
KAZAKSTAN
ARAL SEA
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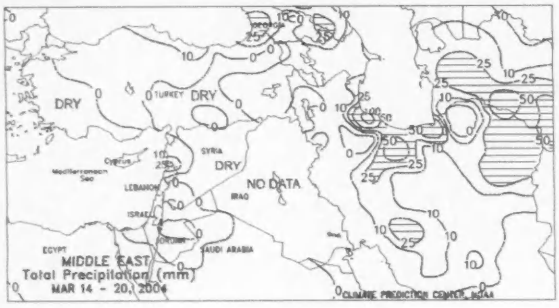
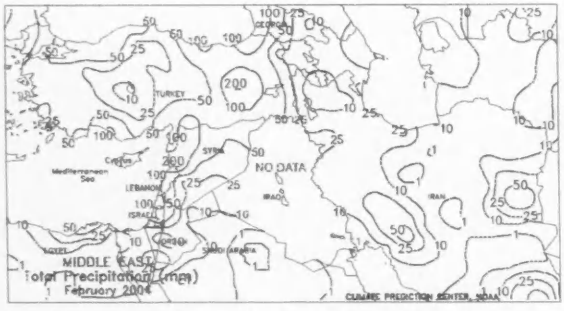
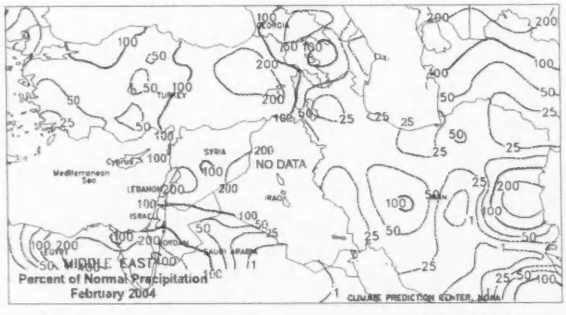
KIRGIZIA
TURKMENISTAN
CHINA
CLIMATE PREDICTION CENTER, NOAA

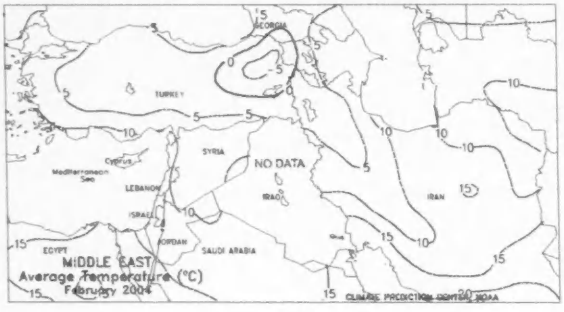


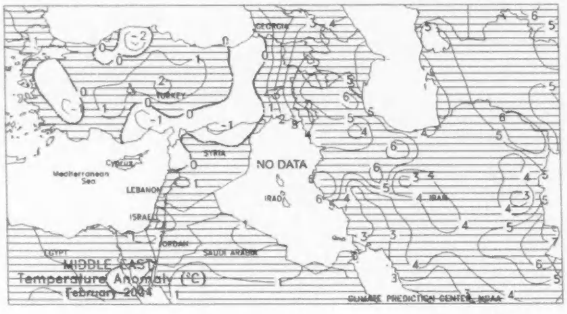
MIDDLE EAST

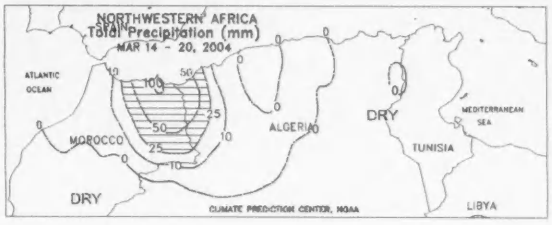
Scattered rain and cooler weather prevailed across Turkey and the eastern Mediterranean, where soil moisture supplies remained adequate. In the central Plateau of Turkey, seasonably cool weather (1-3 degrees C below normal) slowed development of winter grains on the verge of breaking dormancy. Light rain (3-15 mm) fell across central and northern Turkey, with mostly dry weather reported elsewhere. In southeastern Turkey and the eastern Mediterranean, winter grains are vegetative. Based on reports from surrounding countries, dry weather covered most of northern Iraq. In northwestern Iran, light rain (3-15 mm) provided some moisture for rainfed winter grains, but more rain is needed. Heavier amounts (15-40 mm) fell across central Iran and the Caspian Sea region. Much-needed cooler weather, however, prevailed across Iran, sharply reducing crop water use. Temperatures averaged 1 to 3 degrees C below normal across Turkey, eastern Mediterranean, and western Iran. During February, across Turkey and the eastern Mediterranean, near- to above-normal precipitation boosted moisture supplies for winter crops. In western Iran, unseasonably warm, dry February weather reduced moisture supplies and caused winter grains to begin breaking dormancy by early March.





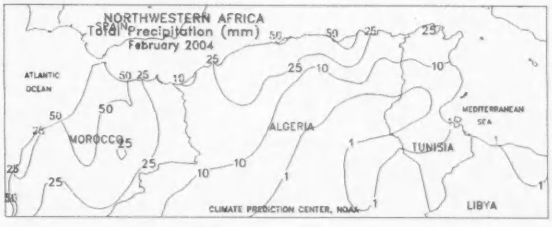


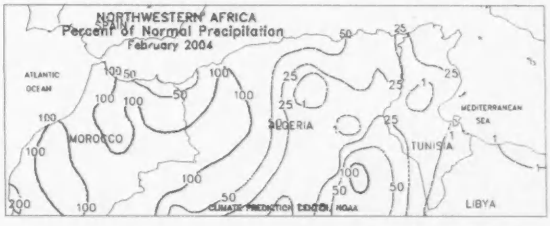


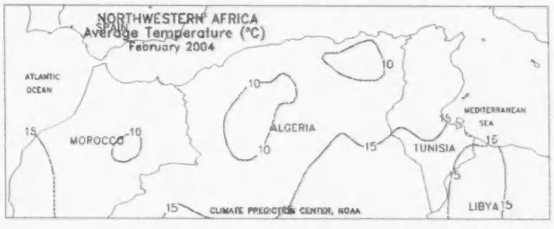


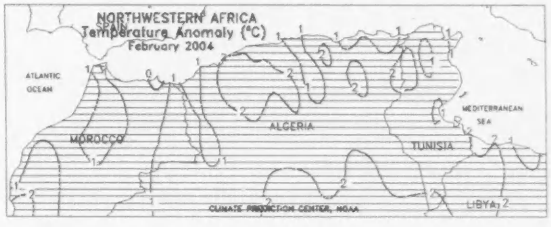
NORTHWESTERN AFRICA

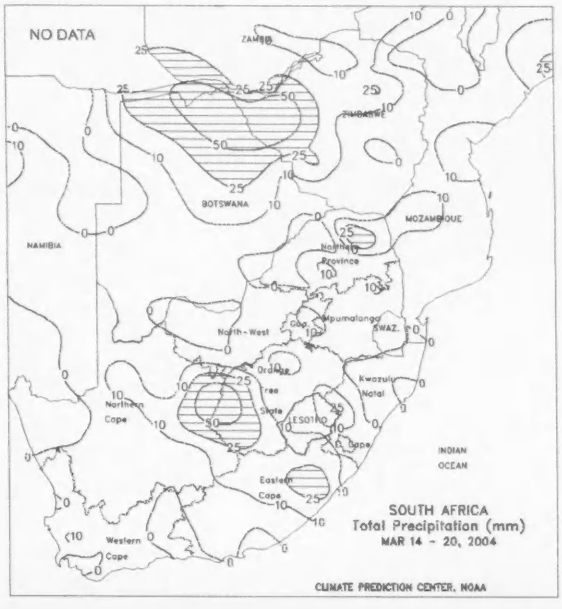
Across coastal eastern Morocco and western Algeria, light to moderate rain (10-25 mm, with isolated amounts greater than 50 mm) favored vegetative to reproductive winter grains. Although mostly dry weather prevailed elsewhere in Morocco, soil moisture supplies remained adequate for normal crop development. In eastern Algeria and Tunisia, however, prolonged dryness has diminished soil moisture reserves for vegetative to reproductive winter grains, and rain is needed soon to prevent serious declines in crop prospects. Temperatures averaged near normal across Morocco and 1 to 4 degrees C above normal across Algeria and Tunisia. From mid-February to early March, much-needed rain across Morocco boosted soil moisture for vegetative winter grains. In Algeria and Tunisia, however, below-normal rainfall in February caused winter grains to rely on soil moisture reserves to sustain normal crop development.





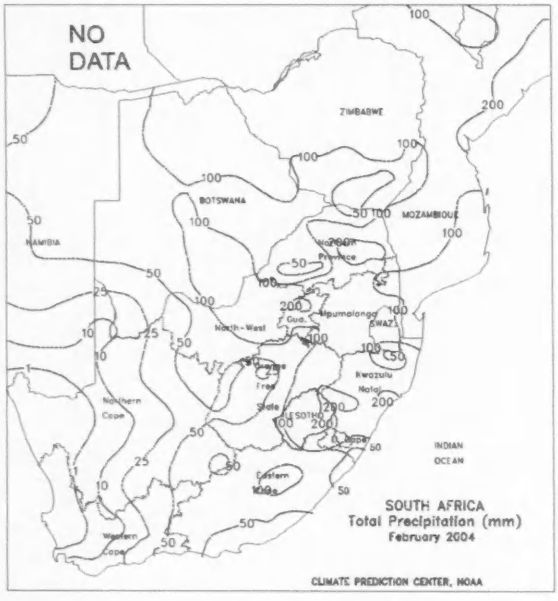


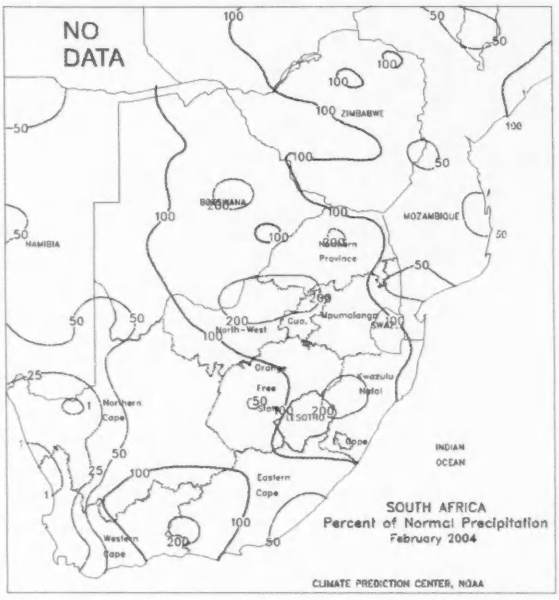


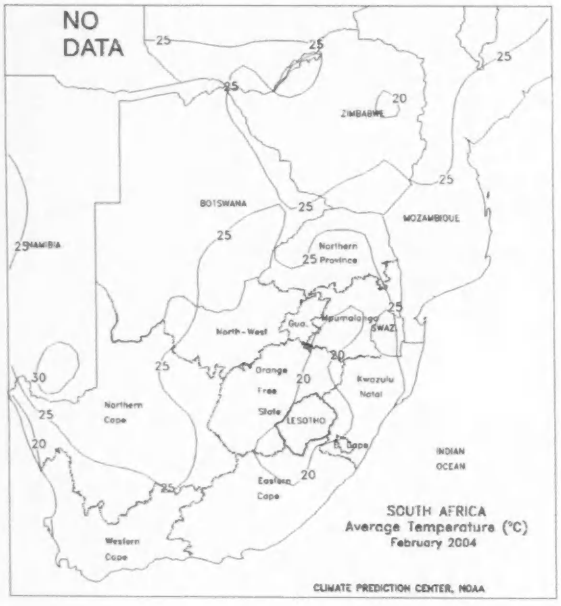


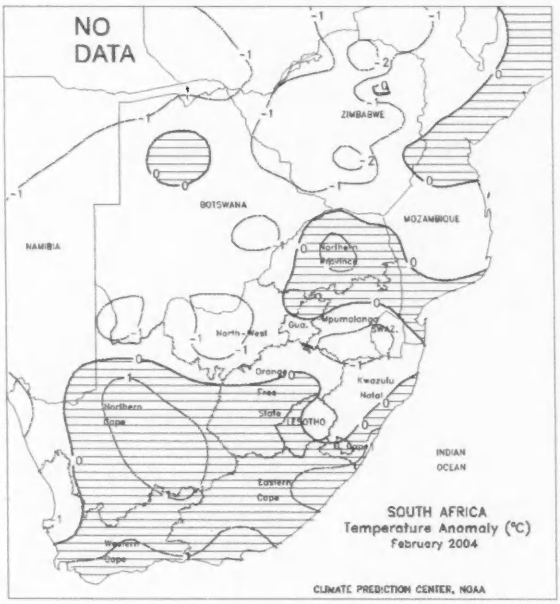
SOUTH AFRICA

Mostly dry, sunny weather favored late summer crop development, especially in recently wet sections of the corn belt, Limpopo (Northern Province), and sugarcane areas in and around KwaZulu-Natal. Temperatures averaged near to below normal in these locations, although the highs continued to range from the middle 20s to lower 30s degrees C. Elsewhere, warm, showery weather (highs in the middle 30s degrees C; rainfall totaling 10-25 mm or more) boosted moisture reserves for immature crops in eastern sections of Eastern Cape. Warm, dry weather continued to the west, with highs in the upper 30s degrees C hastening maturity of Western Cape's fruits and vegetables. Rain is needed to help recharge soil moisture reserves in Western Cape for planting winter wheat, which is usually underway in April. In February, frequent, beneficial showers and seasonable warmth improved summer crop prospects throughout most major production areas. The change to more favorable weather was especially welcomed in primary commercial corn areas of North West, Free State, Gauteng, and Mpumalanga. The exception was Western Cape, where warmth and dryness likely increased crop irrigation requirements.


NO DATA
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gau.
Mpumalanga
SWAZI.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Total Precipitation (mm)
February 2004
CLIMATE PREDICTION CENTER, NOAA

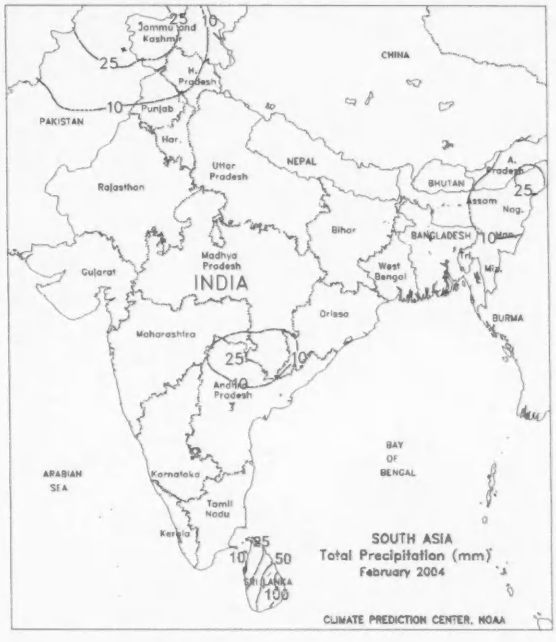

NO DATA
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gau.
Mpumalanga
SWAZI.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Percent of Normal Precipitation
February 2004
CLIMATE PREDICTION CENTER, NOAA

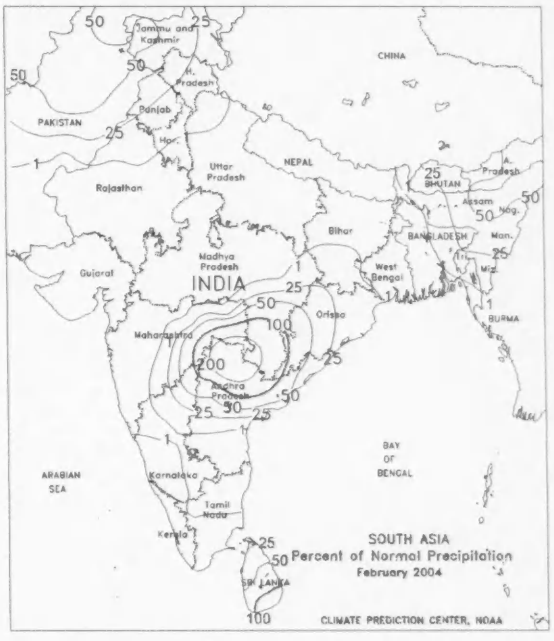

NO DATA
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gau.
Mpumalanga
SWAZI.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Average Temperature (°C)
February 2004
CLIMATE PREDICTION CENTER, NOAA

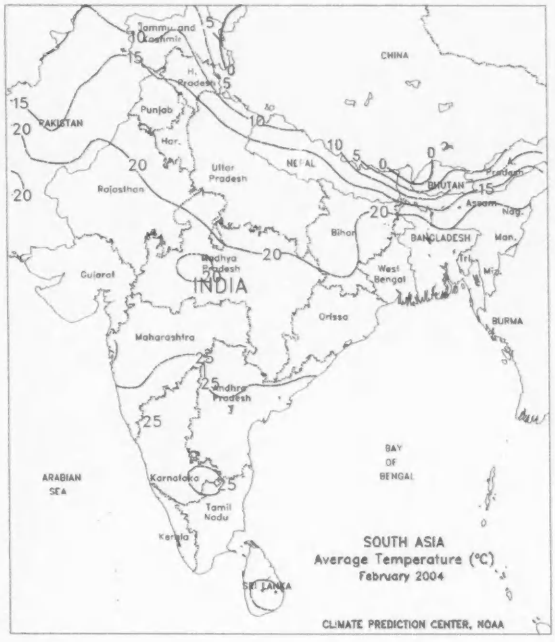

NO DATA
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gau.
Mpumalanga
SWAZI.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Temperature Anomaly (°C)
February 2004
CLIMATE PREDICTION CENTER, NOAA

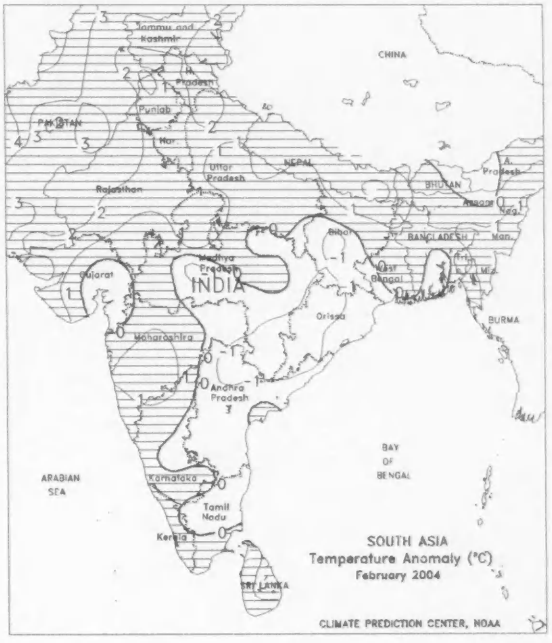
SOUTH ASIA

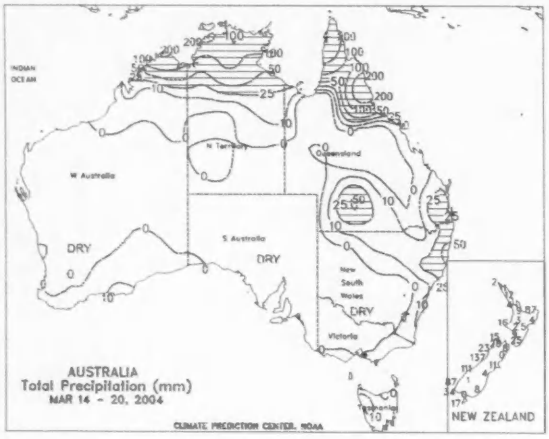
In February, warm, dry weather favored the maturation of oilseeds and winter wheat throughout northern and western India.





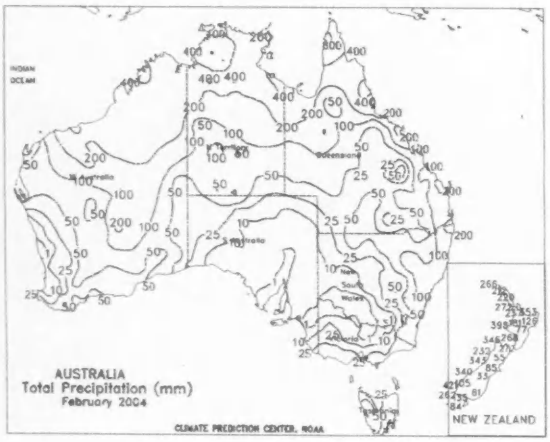


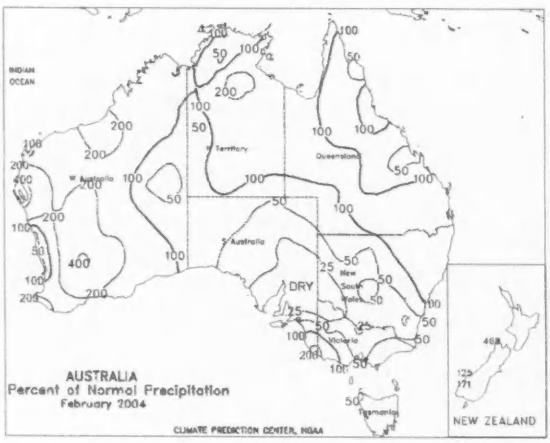


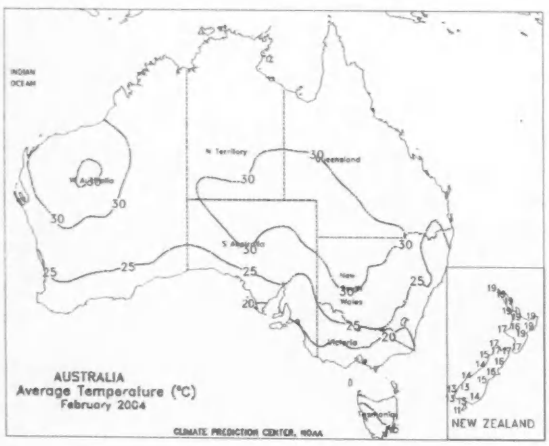


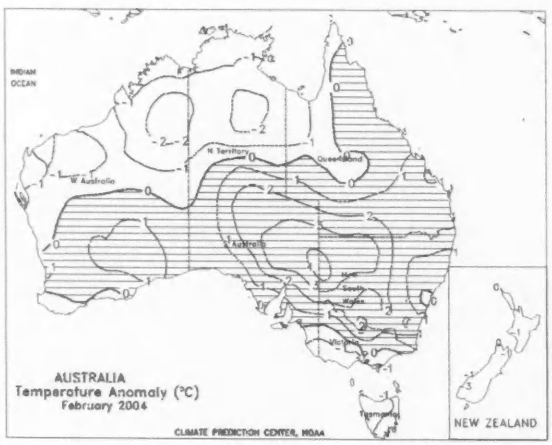
AUSTRALIA

Widespread, locally heavy showers (10-50 mm, locally near 85 mm) overspread the coasts of southern Queensland and northern New South Wales, increasing moisture supplies for sugarcane. Similarly, widespread, albeit lighter, showers (5-30 mm) fell in interior sections of northern New South Wales, maintaining moisture supplies for immature cotton and sorghum. In contrast, mostly dry weather (less than 5 mm) prevailed in interior portions of southern Queensland, favoring summer crop maturation and early harvesting. Temperatures in eastern Australia were generally seasonable, aiding crop development. In February, midmonth heat and dryness temporarily increased stress on summer crops. Otherwise, widespread, soaking rains brought additional drought relief to Queensland and northern New South Wales. The beneficial rainfall boosted soil moisture and irrigation supplies for reproductive to filling summer crops, creating generally favorable conditions for crop development.



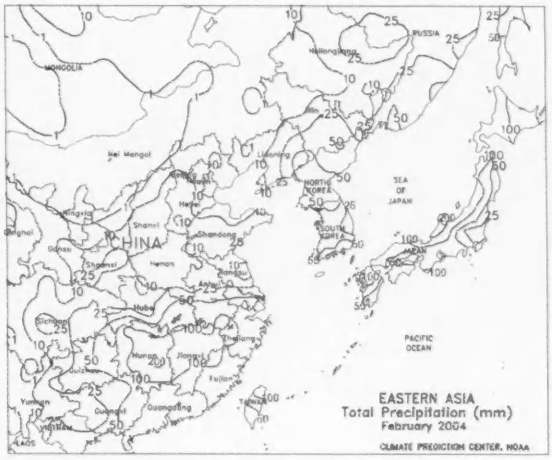


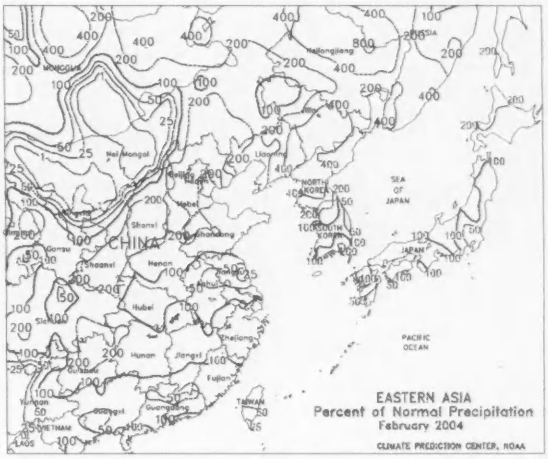


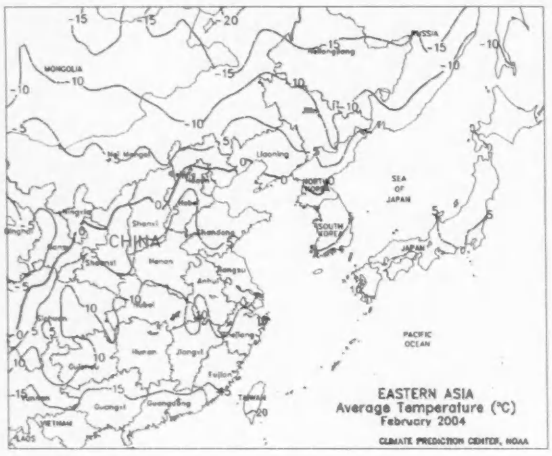


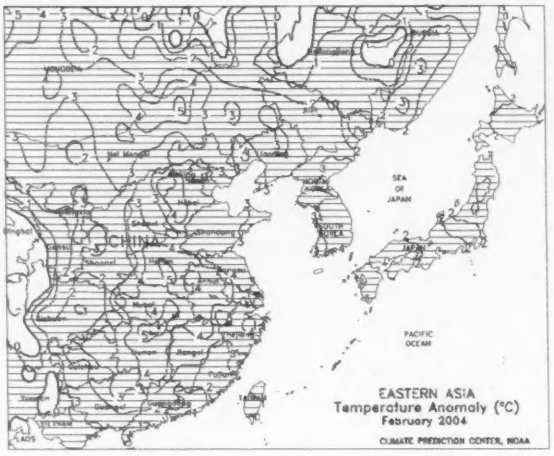
EASTERN ASIA

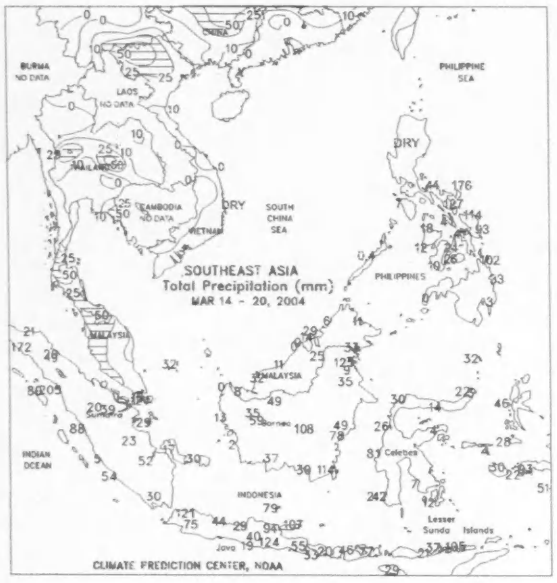
Dry weather continued in the North China Plain. Mild temperatures aided development of greening winter wheat, although freezing temperatures lingered in the more northerly growing areas. Long-term moisture reserves are overall favorable in the main wheat areas, but greening crops will soon need spring showers to ensure good early development. Moderate to heavy showers (25-100 mm) fell along the Yangtze Valley and southern China, increasing irrigation reserves for the establishment of rice and other summer crops. Farther north, the weather remained cold (lows of -15 degrees C) in Manchuria, precluding early fieldwork. In this region, spring wheat planting is usually underway by April, followed by corn and soybean planting. Scattered showers (10-25 mm) swept across Japan, while the Koreas remained mostly dry. In February, conditions on the North China Plain remained mostly favorable for winter wheat, breaking dormancy in southern growing areas by early March. Farther south, increasing shower activity since mid-February has benefited rapeseed development and increased moisture reserves for spring growth of sugarcane and rice.





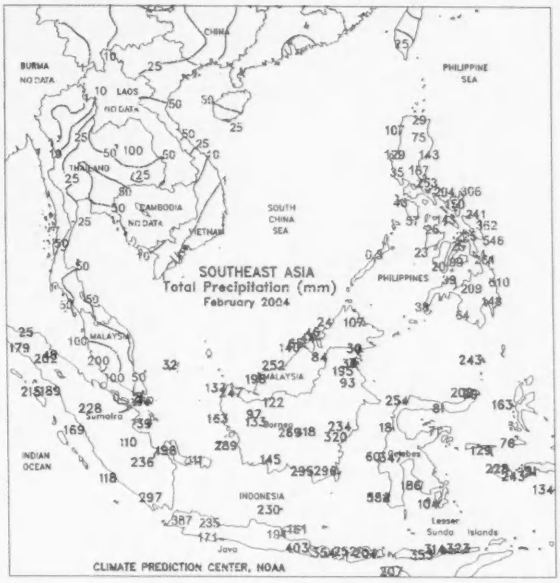


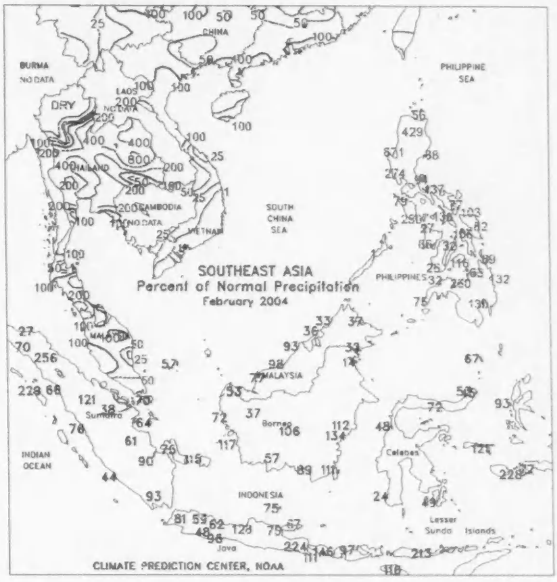


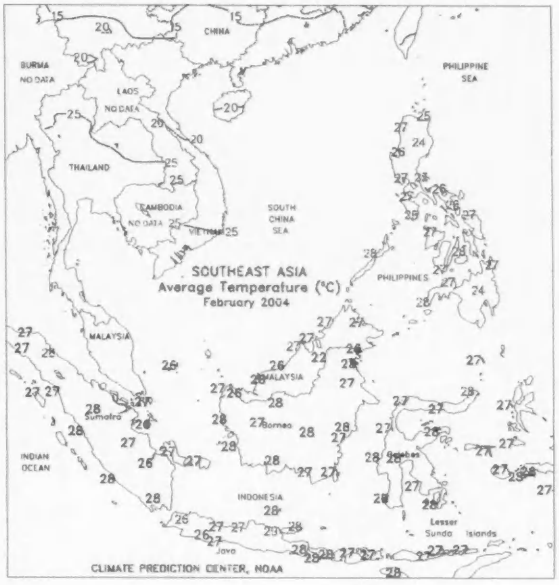


SOUTHEAST ASIA

A weak tropical storm brushed the eastern Philippines, causing heavy showers along the central islands. Elsewhere in the Philippines, dry weather favored late rice harvesting and field preparation for corn planting. In Indonesia, showers (25-50 mm or more) increased moisture supplies for oil palm and maturing rice. In February, near-normal precipitation favored reproductive rice in Java, Indonesia, while below-normal rainfall lowered short-term moisture levels for oil palm in Sumatra and Malaysia. Cool weather in eastern Thailand slowed rice development, but above-normal rainfall increased irrigation supplies.


SOUTHEAST ASIA
Total Precipitation (mm)
February 2004
CLIMATE PREDICTION CENTER, NOAA

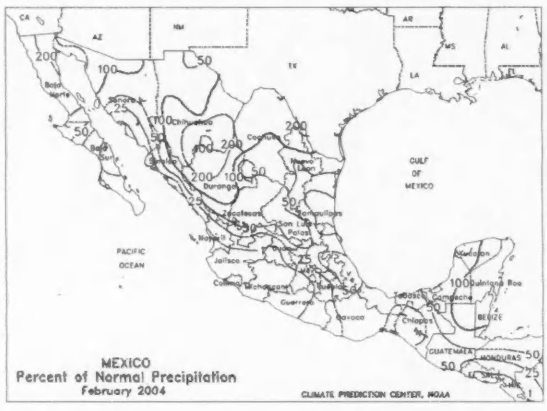

SOUTHEAST ASIA
Percent of Normal Precipitation
February 2004
CLIMATE PREDICTION CENTER, NOAA

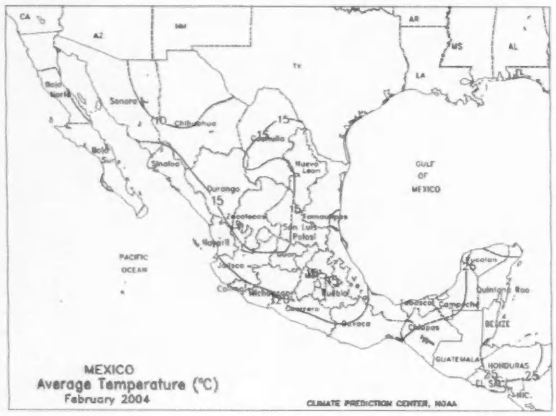

SOUTHEAST ASIA
Average Temperature (°C)
February 2004
CLIMATE PREDICTION CENTER, NOAA

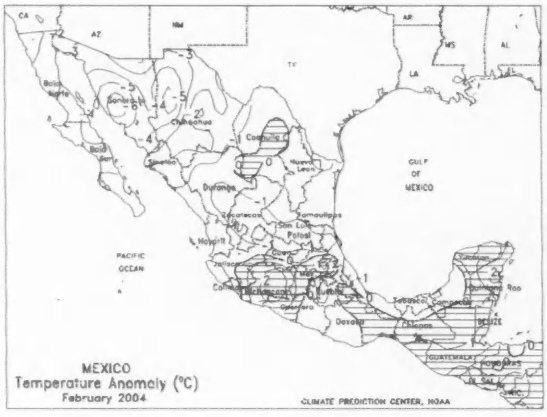
SOUTHEAST ASIA
Temperature Anomaly (°C)
February 2004
CLIMATE PREDICTION CENTER, NOAA

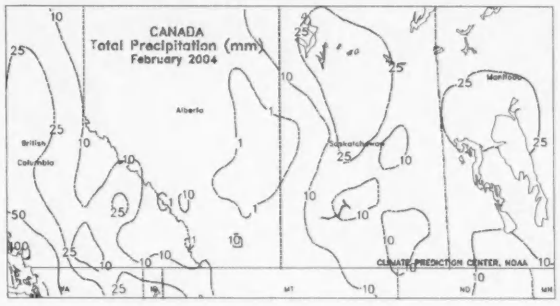
MEXICO

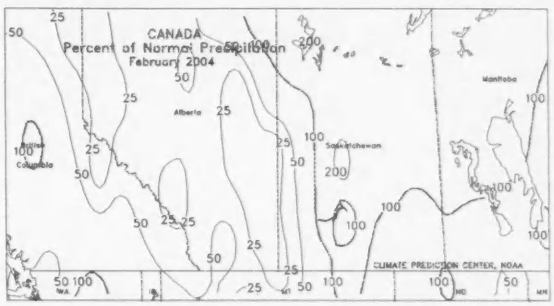
During February, near- to above-normal rainfall covered most of northern and north-central Mexico, boosting moisture supplies for winter and spring crops and irrigation supplies. Near-normal rainfall covered the Yucatan Peninsula, while seasonably dry weather prevailed across central and southern Mexico. Temperatures averaged 1 to 4 degrees C below normal across the northern half of Mexico and near normal elsewhere.

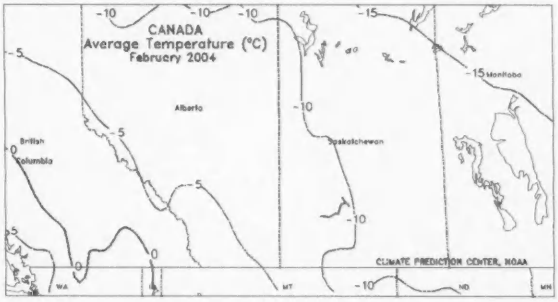


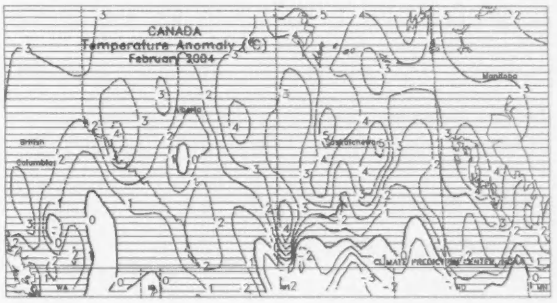


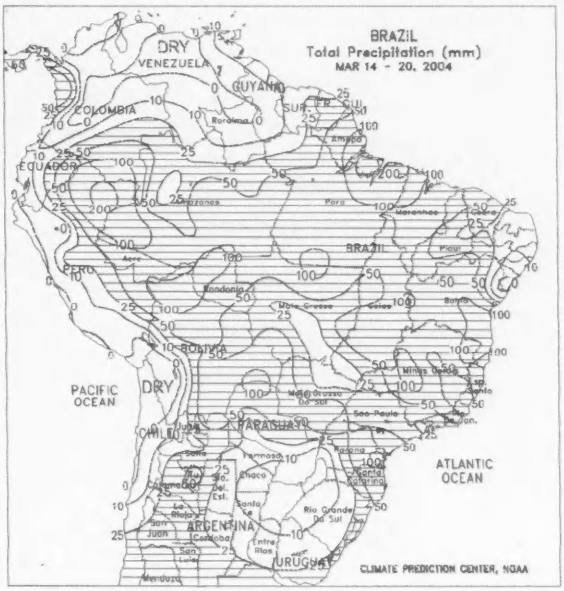












BRAZIL

In the south, widely scattered showers (locally exceeding 25 mm) brought local relief to immature corn and soybeans from Rio Grande do Sul to western Parana. However, primary soybean areas of Rio Grande do Sul continued to be the driest locations, further limiting moisture levels for late crop development. Moderate showers (25-50 mm or more) covered Mato Grosso do Sul, Sao Paulo, and central and eastern Parana, although soybeans and summer corn were approaching maturation, thereby reducing the potential benefits. Locally heavy rain (50-100 mm) returned to northeastern growing areas (Goias and Minas Gerais northward), hampering fieldwork but maintaining abundant moisture reserves. Rainfall increased in Minas Gerais but ranged from 10 to 50 mm or more, with enough dry periods to encourage harvesting. In February, unseasonable dryness continued in southern soybean and corn areas (Parana and Rio Grande do Sul), reducing available moisture for filling crops. Farther north, inundating rain kept maturing soybeans unfavorably wet from Mato Grosso eastward, hampering fieldwork and raising concerns about the potential for increased outbreaks of disease and pests.

BRAZIL
Total Precipitation (mm)
February 2004
VENEZUELA
GUYANA
SUR.
FR. GUI.
COLOMBIA
ECUADOR
PERU
BOLIVIA
PARAGUAY
CHILE
ARGENTINA
URUGUAY
PACIFIC OCEAN
ATLANTIC OCEAN
Amazonas
Para
Maranhao
Ceara
Piaui
Bahia
Goias
Mato Grosso
Minas Gerais
Sao Paulo
Rondonia
Acre
Roraima
Amapa
Tocantins
Parana
Santa Catarina
Rio Grande Do Sul
Mato Grosso Do Sul
Esp. Santo
Rio de Janeiro
Formosa
Chaco
Salta
Jujuy
Tucuman
Sgo. Del. Est.
Catamarca
La Rioja
San Juan
Cordoba
Santa Fe
Entre Rios
San Luis
Mendoza
CLIMATE PREDICTION CENTER, NOAA

BRAZIL
Percent of Normal Precipitation
February 2004
VENEZUELA
GUYANA
SUR.
FR. GUI.
COLOMBIA
ECUADOR
PERU
BOLIVIA
PARAGUAY
CHILE
ARGENTINA
URUGUAY
PACIFIC OCEAN
ATLANTIC OCEAN
Amazonas
Para
Maranhao
Ceara
Piaui
Bahia
Goias
Mato Grosso
Minas Gerais
Sao Paulo
Rondonia
Acre
Roraima
Amapa
Tocantins
Parana
Santa Catarina
Rio Grande Do Sul
Mato Grosso Do Sul
Esp. Santo
Rio de Janeiro
Formosa
Chaco
Salta
Jujuy
Tucuman
Sgo. Del. Est.
Catamarca
La Rioja
San Juan
Cordoba
Santa Fe
Entre Rios
San Luis
Mendoza
CLIMATE PREDICTION CENTER, NOAA

BRAZIL
Average Temperature(°C)
February 2004
VENEZUELA
GUYANA
SUR.
FR. GUI.
COLOMBIA
ECUADOR
PERU
BOLIVIA
PARAGUAY
CHILE
ARGENTINA
URUGUAY
PACIFIC OCEAN
ATLANTIC OCEAN
Amazonas
Para
Maranhao
Ceara
Piaui
Bahia
Goias
Mato Grosso
Minas Gerais
Sao Paulo
Rondonia
Acre
Roraima
Amapa
Tocantins
Parana
Santa Catarina
Rio Grande Do Sul
Mato Grosso Do Sul
Esp. Santo
Rio de Janeiro
Formosa
Chaco
Salta
Jujuy
Tucuman
Sgo. Del. Est.
Catamarca
La Rioja
San Juan
Cordoba
Santa Fe
Entre Rios
San Luis
Mendoza
CLIMATE PREDICTION CENTER, NOAA

BRAZIL
Temperature Anomaly (°C)
February 2004
VENEZUELA
GUYANA
SUR.
FR. GUI.
COLOMBIA
ECUADOR
PERU
BOLIVIA
PARAGUAY
CHILE
ARGENTINA
URUGUAY
PACIFIC OCEAN
ATLANTIC OCEAN
Amazonas
Para
Maranhao
Ceara
Piaui
Bahia
Goias
Mato Grosso
Minas Gerais
Sao Paulo
Rondonia
Acre
Roraima
Amapa
Tocantins
Parana
Santa Catarina
Rio Grande Do Sul
Mato Grosso Do Sul
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Tucuman
Sgo. Del. Est.
Catamarca
La Rioja
San Juan
Cordoba
Santa Fe
Entre Rios
San Luis
Mendoza
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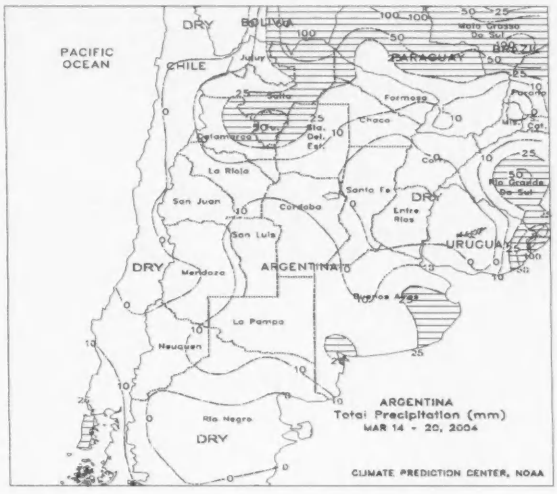
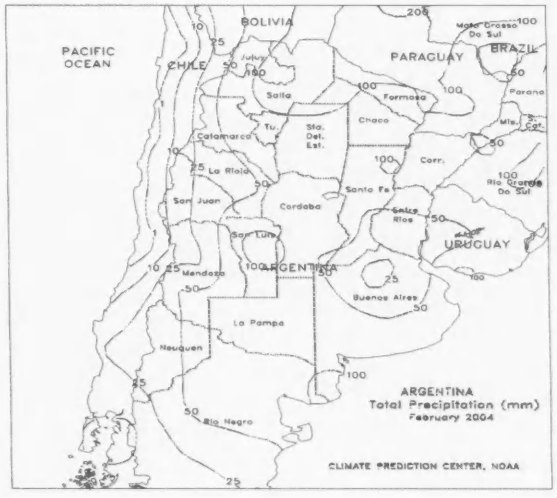
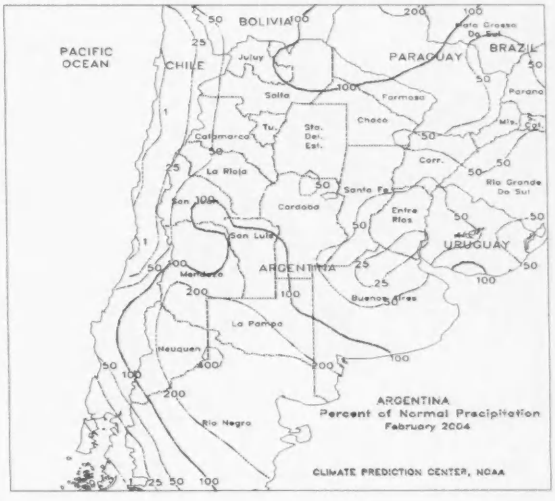
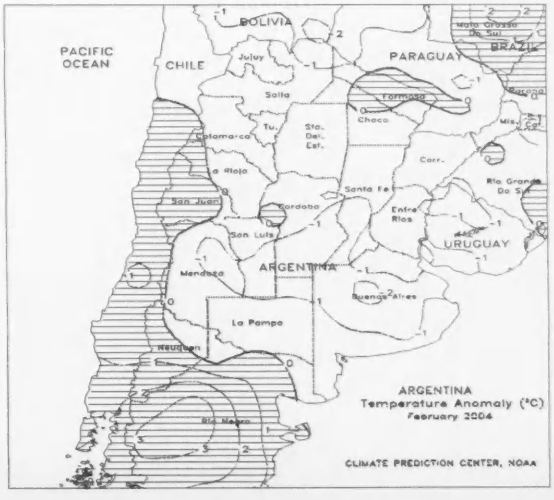


ARGENTINA

Showers (10-25 mm or more) swept across key southern and western growing areas (notably southern Cordoba, La Pampa, and Buenos Aires), boosting moisture levels for immature corn, sunflowers, and soybeans. In contrast, drier weather returned to more northerly growing areas (northern Cordoba, Santa Fe, Entre Rios, and points north), following 2 weeks of timely rain. Sunny skies in these drier locations hastened crop maturation and helped to improve cotton fiber quality. Above-normal temperatures (highs reaching the lower 30s degrees C) boosted growth rates throughout the main summer grain, oilseed, and cotton regions. According to the Buenos Aires Cereals Exchange, corn and sunflowers were 24 and 52 percent harvested, respectively, as of March 20. Soybeans were 4 percent harvested, compared with 10 percent last year. Cotton harvesting usually takes place from March to June. In February, a drying trend gradually reduced moisture reserves for normal summer crop development, following an early-month boost in rainfall. However, near- to below-normal temperatures mitigated the potential for stress, especially in western growing areas where late-planted crops were behind in development. Overall, this season has been much drier than last year, when abundant rainfall resulted in record corn and soybean yields.







The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is published weekly and is jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. NOAA and IMC are responsible for managing, printing, and distributing the bulletin. The contents may be reprinted freely, with proper credit.

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